WOHRC NEWS

WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER

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Right-to-Know Acts Passed in Five States

Employers must give workers data about toxic substances in the workplace.

"Right-to-Know" laws that require employers to inform workers of hazardous substances in the workplace were passed in five states in 1980, and this January, Philadelphia, Pennsylvania, became the first city to pass similar legislation.

The Philadelphia law is unique in that it requires disclosure not only to employees of firms using such substances but to all citizens who may be affected. The result of persistent lobbying by a coalition of labor and community organizations, the law amends the city's air management code to require companies to report to the municipal Health Department any toxic substances emitted from their plants. It also amends the fire code to force firms to identify any toxic materials they use or store on their premises.

The state bills, passed in New York, California, Michigan, Maine, and Connecticut, extend the right to know only to employees of companies using hazardous substances in the workplace.

New York most stringent

The New York law, the most stringent, makes it the right of each worker to ask for and receive information about chemicals with which she/he works. If an employee makes such a written request and the employer does not respond within 72 hours, the employee can refuse to work with that substance. Civil and criminal penalties are provided for noncompliance.

The New York law also requires employers to educate and train employees in the safe and proper handling of hazardous substances once a year or upon assignment to a new job. In addition, the employer must maintain for 40 years records of the names and addresses of employees who have come into contact with any of the 400 chemicals listed in Federal Occupational Safety and Health Regulations.

Special provisions are included for protecting ingredients that are trade secrets, while still informing employees of hazards such substances may pose.

The New York right-to-know law defines a toxic substance as one "which is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances or has yielded evidence of acute or chronic health hazards in human, animal or other biological testing." The NIOSH registry alone lists over 33,000 chemicals.

continued on page 6

Don Moran

Mary Louise Brown, recently honored for a distinguished career in occupational health nursing, in the uniform of the Commissioned Corp of the U.S. Public Health Service. (See page 4.)

Sperm Count

This box will contain periodic reports showing that toxic chemicals in the workplace affect male as well as female reproductive capacity. Contributions from readers are welcome.

Reduced sperm counts among 30 workers exposed to dinitrotoluene (DNT) and toluene diamine (TDA) as well as higher miscarriage rates among their wives were recently discovered in a NIOSH investigation at the Olin Chemical Company plant in Brandenburg, Kentucky.

Olin employees had requested the investigation after one worker became concerned when his wife suffered her third miscarriage within three years, a time period which coincided precisely with the man's assignment to the TDA unit. Of nine men who currently staff the unit, only one has had a healthy child conceived since beginning work in the area. Among the other wives, 10 miscarriages were reported, while two of the couples noted growth abnormalities and mental retardation in their 5-year-old sons. Semen abnormalities were found in four of the men, and the group as a whole was found to suffer from hypertension, skin rashes, and lipid irregularities stemming from unknown sources.

—*Occupational Safety & Health Reporter*

Good Lighting for tl

Most workers choose lighting as the most i

In a recent survey, 900 office workers chose lighting as the most important aspect of their work environment. Most of us would concur. Eighty-five percent of the information we receive from our surroundings is perceived through the eyes. Lighting affects our comfort, efficiency, safety, and even our mood.

Just as an overcast day has an effect on how we feel and respond, so too do dimly lighted areas, areas with large differences in brightness levels, and even very bright rooms.

The best lighting system is one in which the lighting level is geared to the task, the brightness ratios are controlled, the colors and reflectances of ceilings, walls, and floor are carefully chosen, and the people in the room are unaware of the lighting system because everything is "just right."

What affects visibility

There are four fundamental factors in visibility: time, size, contrast, and brightness.

Time is particularly important when working with moving equipment. A machine operator must see quickly. There is no way that she can stop her machinery to get a longer look. So the lighting must be adequate for quick, accurate visibility.

WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER

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(Subscription information on page 6.)

Size comes to the fore when working with small parts. Light must be adequate to see details.

Contrast between the task and its background is critical. One of the hardest known seeing tasks is sewing black fabric with black thread.

Brightness is the most controllable factor in visibility. By putting more light on a task we raise its brightness and thus can increase its visibility in spite of its small size, poor contrast, or lack of time to see well.

How much light people need

Laboratory research has been done on exactly how much light people need under certain conditions. Using this data, the Illuminating Engineering Society has published tables of lighting levels for most major seeing tasks.

However, one does not have to be an illuminating engineer to ascertain the light in a particular workplace. For anyone interested in quick, easy readings, pocket-type meters are available in the $35 price range. The meter should be placed on the surface being measured.

More expensive, low-range meters can be used to read some of the OSHA minimums on steps, stairs, passageways, and in the outdoors.

Older workers

Characteristics of individual workers must also be taken into account in choosing lighting levels. Older workers, in particular, require more light. The amount of light reaching the retina decreases with age. Age also makes us less resistant to glare.

The unit used to measure light falling on a task is a footcandle. In one study, a young age group could perform at 70 units of light, or footcandles. The 36- to 45-year-old group, to perform equally well, needed 100 footcandles, and those 56 to 65 needed twice that.

Shadows and glares

Footcandles alone, however, are not sufficient measure of illumination. Distribution of the light is also important. Lighting that may have been perfectly adequate when first installed can fail if stacks of work material pile up and cut off its source from the worker, or if new equipment is moved into place and interferes with its beams.

A good way to avoid shadows is to have light come from many, rather than only one direction. This is called diffusion. Lighting directly on work areas combined with diffuse background lighting is generally most desirable. Diffusion can be accomplished through fluorescent lighting, the use of multiple lighting sources, and by utilizing walls, ceilings, and even floors as reflecting surfaces.

In cases where shadows are desirable to facilitate depth perception and the viewing of small details, they may be provided by supplementary lighting.

Glare results from light in the wrong place. It can make seeing difficult, cause eye strain and fatigue, hinder productivity, and be a cause of accidents.

Glaring, uncontrolled light in corridors or on steps can be particularly dangerous. Thus, measurements in stairway areas should include not only the number of footcandles but some subjective appraisal to determine if the brightness causes seeing problems.

Glare can be controlled by decreasing excessive brightnesses. Shielding of light sources is important. Windows should have shades or blinds. Lighting equipment should be mounted so that light illuminates the work rather than shines into the worker's eyes.

If work areas must be brightly lit, workers should be situated so that the bright lights do not intrude upon their angle of vision. Shields in front of lights can help to accomplish this. A shield to an angle of 45 degrees is ideal.

Glare also results from reflections into the eyes from shiny surfaces. This can be a problem in many industrial operations, and can be dangerous if moving machinery is involved.

Because of glare, the Illuminating Engineering Society also specifies reflectance factors of walls, floors, and ceilings. Light-colored, matte finishes are recommended. They also serve to reduce harsh contrast between bright fixtures and dark backgrounds, and make the

News from Canada

In this issue WOHRC News introduces a page on women and occupational health in other countries, most importantly Canada. Given the size of our Canadian readership and the importance of sharing information across borders, we hope in each issue to present material about Canadian women workers.

Mary Morison of Halifax, Nova Scotia, will edit all Canadian news. Before moving to Halifax last June, Ms. Morison worked for the Ontario Federation of Labor Health and Safety Training Program, writing and researching material, training workers in health and safety, and editing the program's newsletter, *At the Source.*

In order that the material presented may accurately reflect the activities of women across Canada, we have contacted people in the field and asked that they keep us informed. We also welcome news and comments from our Canadian readers. Please send all such communications to Mary Morison, #11-1544 Summer Street., Halifax, NS, Canada B3H 3A4.

Fish Plant Workers

On both coasts of Canada, a major industry is fishing and the processing of the catch. Most fishermen are male; most fish plant workers are female. In assembly-line operations these women skin, debone, and deworm fish, preparing them for packaging. The plants are damp, noisy, and alternately hot and cold. Standing through four-hour shifts over tables lit by fluorescent lights, the women wield sharp knives at a pace set by the line. Because the cleanliness of the food is of paramount importance, powerful cleansers are used, cleansers that may have serious effects on the workers' health.

The Fisherman, Vancouver, B.C.

Canadian fish plant workers.

At Riverport, Nova Scotia, last spring, women began fainting on the line. Although no toxic substance was ever formally identified as the responsible agent, at least some workers believe it was hydrogen fluoride, used as a cleanser. In the United States, use of this chemical is banned in the food processing industry.

After several spontaneous work stoppages and a government investigation, the plant apparently has stopped using the cleanser.

The Latest on Lead

In 1976, General Motors Oshawa, in Ontario, ordered that seven women employees either produce evidence that they were sterile or stop working in the lead battery operation. Their case became one of the most publicized examples of toxic substance exposure being used as the basis of discrimination against women.

A grievance filed by the United Auto Workers on behalf of the women went to arbitration, but was denied. Of the seven women, one was finally sterilized. The others found work in other parts of the plant at the same or higher rates of pay.

The women also took their complaint to the Ontario Human Rights Commission. The commission refused to rule on the case, but instead requested the Minister of Health to "immediately investigate throughout the Province the health dangers involved for all those working in conditions where they are exposed to lead oxide emissions in order to ensure a safe working environment for all employees in Ontario battery plants."

As a result, a regulation has been proposed setting a standard for airborne lead of .15 mg/m^3 of air. Workers with blood lead levels exceeding .07 mg/l. are to be removed from exposure. No provision has been made to ensure rate retention in the case of transfer, but even more significant, the levels of exposure allowed offer no protection against damage to either reproduction or overall health in either men or women workers. Four years later, workers in Ontario are still not ensured a "safe working environment."

Nova Scotia Conference

Over 100 women workers from across Nova Scotia gathered in Halifax on October 4, 1980, to attend the first conference on women and occupational health ever held in the province. Women fish plant workers, teachers, clerks, librarians, health care workers, and others spent the day discussing their problems and considering solutions.

WOHRC director Dr. Jeanne Stellman gave the keynote address and provided participants with issues to consider during the rest of the program.

"Little or no research has been done on the occupational health problems of women workers," Dr. Stellman noted. "As a consequence, we too often assume that women's work is safe."

Following the morning workshops and noontime film, *Working for Your Life,* a panel discussed options for solving some of the problems raised. Pat Clahane, a Halifax lawyer, cautioned workers not to expect much help from the law.

"Nova Scotia's health and safety laws are probably the worst in Canada," she said.

Different union strategies were discussed by representatives of the Dalhousie University Faculty Association and the Canadian Union of Postal Workers. □

Canadian Calendar

"Towards Equality," a 1981 calendar celebrating the history of women in the Canadian labor movement, has just been published by the British Columbia Government Employees Union. Each month features a photograph and a brief essay on some historic struggle conducted by working women.

Copies of the calendar may be ordered from WOHRC for $2 each plus 50 cents postage and handling.

Forty Years of Industrial Nursing

Mary Louise Brown recalls a distinguished career.

Reminiscences of a 40-year career that started in a steel mill and ended in high government office were shared with WOHRC recently by Mary Louise Brown. A leader in occupational health nursing, Ms. Brown retired with honors last November as regional consultant for occupational safety and health in the U.S. Department of Health and Human Services.

Before joining the government, Ms. Brown, a pioneer in occupational health nursing and an industrial nurse, was an assistant professor of public health at the Yale University School of Medicine. She developed that school's course in occupational health nursing as well as those of several other universities.

Her career began, Ms. Brown told WOHRC, as the result of a series of coincidences. "I grew up in a steel mill town. My grandfather was in the Homestead Steel strike. In the hospital where I trained—Western Pennsylvania Hospital in Pittsburgh—U.S. Steel had its own ward."

After graduation, Ms. Brown worked as a student supervisor in the hospital's gynecological ward, making $50 a month. It was the Depression and her family was poor, but her younger brother wanted to go to medical school.

"We had a family conference one night," she remembers, "and talked about medical school, and then I went out for a walk. I walked down the hill—Pennsylvania is built on hills, you know—and there at the foot of the hill was the office of the steel mill doctor. There he was, on duty alone, on a Saturday night.

"I walked right in and said, 'Bob, do you need a nurse at the mill?' And that's how I got into occupational health. I went from making $50 a month to $150 a month."

There were about 6,000 workers in the mill, she remembers, and "I learned safety from a safety director who really believed in it." She was taken to see all the operations of the mill so that she could think in terms of safety first.

During World War II, she remembers, "women came in and took terribly heavy jobs. They were in the blast furnace, they were on cranes." The problems changed too. "More people problems," she says. "You had the foreman who had to get a job done and the woman who had to go home to a sick child."

The steel mill taught her more about occupational health nursing than did her early professional training, says Ms. Brown. Even today, she notes, "there is little occupational health in nurses' training. I've been involved for years in helping people in nursing education include concepts of occupational health."

About the future of occupational health nursing, she comments, "I have no crystal ball, but I do have some dreams. I believe the millennium will have come when every nurse is as concerned about prevention as I am . . . and when every nurse is as concerned about her own health and safety."

She adds, "We must help other people, not necessarily professionals, be knowledgeable about health and safety too. We must deal with their questions. I can foresee the worker becoming the leader of the occupational health team in the future." □

New Hepatitis Vaccine Will Help Health Workers

A new vaccine against hepatitis B, a dangerous viral disease that particularly threatens health workers, recently passed its first major clinical trial in this country. It may be available to the general population in as few as two years.

In the tests conducted by Dr. Wolf Szmuness of the New York Blood Center, the vaccine was given to some 500 homosexual males, with a similar group injected with a placebo. Homosexuals were chosen because they show a particularly high incidence of the disease. Ninety-six percent of those who received the vaccine remained free of hepatitis, whereas 27 percent of the control group developed the disease.

The Blood Center is now conducting tests among patients and staff members at kidney dialysis centers, who are also highly susceptible. Hepatitis B is most commonly carried in blood, though it can also be spread through breast milk, saliva, semen and intimate personal contact. At least 150,000 Americans are believed to be affected each year.

Health workers at particular risk, in addition to those at dialysis centers, include laboratory technicians; operating room assistants; and those who work with drug addicts and retarded children, two groups that show a high incidence of the disease.

Symptoms include inflammation of the liver, fever, weakness, loss of appetite, malaise, headache, and muscle pain, although some carriers do not experience symptoms and discover they have the disease only through blood tests. Many infected persons develop incapacitating chronic hepatitis, and some suffer liver damage.

There is also evidence that the new vaccine may provide protection against one type of liver cancer. □

NEWS FLASH

The EEOC-proposed guidelines concerning employment discrimination and reproductive hazards in the workplace were withdrawn by the agency shortly before the Reagan administration took office.

Civil rights, occupational health, and feminist organizations were concerned over the clause in the proposed guidelines allowing "temporary, emergency exclusion" of fertile women in certain instances. (See *WOHRC News*, April/May 1980.) Industry representatives had also opposed the guidelines which were issued last February 1.

e Good Workplace

ıportant aspect of their work environment.

lighting system more efficient by increasing the amount of useable light.

Fatigue

Research in vision laboratories has shown that it does take energy to see. That is why poor lighting results in a feeling of weariness and eyestrain. Other symptoms of struggling to see may be irritation, watering and reddening of the eyelids, double vision, headache, decrease in the power to focus, as well as in visual acuity, contrast sensitivity, and speed of perception.

All of these can certainly lead to an increase in accidents.

Safety

One study found that poor lighting was the sole cause of 5 percent of industrial accidents, and that in 20 percent, poor illumination and eye fatigue were a factor. In one large forge shop, a lighting increase from 15 to 150 footcandles was accompanied by a 24.8 percent reduction in industrial accidents.

Lighting for safety also includes proper illumination of stairways, corridors, and hallways so that employees are safe from assault or attack.

Still another factor to be considered is the stroboscopic effect – the flickering effect that may result from fluorescent or other high intensity lighting which operates in cycles, actually going on and off 120 times a second. This can, in some cases, make moving machinery seem to be standing still. Although not a common complaint, it can be solved by three-phase wiring and alternate fixtures on different phases. Overlapping the lighting will neutralize the strobe effect.

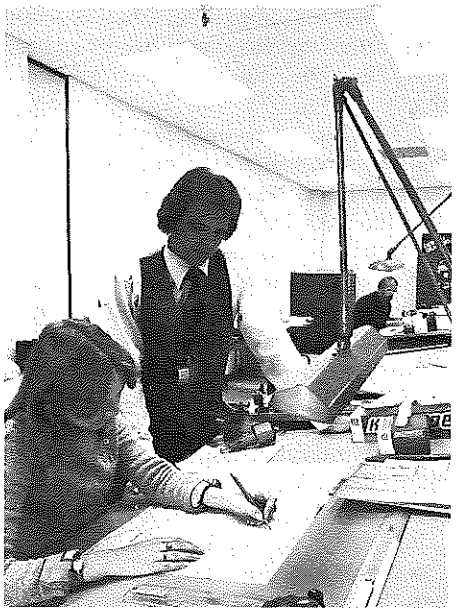
When identifying colors are relevant to safety, lighting may also be a factor. Tests have shown that when workers are accustomed to a given light source they have no difficulty recognizing standard safety colors down to as low as 5 footcandles. The current OSHA recommendation of ½ footcandle for safety lighting in active areas may have to be reconsidered because of such test data.

For minimum safety light levels, see the 1973 Life Safety Code, Occupational Safety and Health Act, the National Electrical Code of the National Fire Protection Association, and the Federal Construction Industry Safety Act.

Maintenance

No matter how good a lighting system is when new, it may well fall below par if it is not properly maintained. Lamps themselves depreciate in light output over time; dirt accumulates on fixtures, lamps, and room surfaces; and burnouts occur. A good cleaning and maintenance program is essential.

Light-colored, matte-finished surfaces in this hospital minimize glare.



GE Nela Park Photos

Good diffuse lighting overhead combined with direct light on the task makes for an ideal lighting situation.

A lighting checklist

The following questions can help you evaluate the adequacy of the lighting in your work area. Compare your answers with the ideal lighting conditions described in the above article.

- What is the main source of lighting in your workplace? Daylight, fluorescent, or incandescent (lightbulbs)?
- Do you have supplemental lighting at your work area?
- Can you adjust the lighting in your work area?
- Does the lighting in your work area create glare that makes it difficult to see or perform your work?
- Does the lighting in your work area produce shadows which interfere with your work?
- How far away is the window nearest to your desk?
- Is the level of lighting in your office: too high, too low, about right?
- Do you feel you must strain to see your work clearly? Do you bend over work, squint, bring work close to your eyes?
- Does lighting in your work area have an effect on your work performance? □

1981 Conference Series Planned by WOHRC

A conference series, "Issues in the Occupational Environment," will be held by WOHRC in the spring and fall of 1981.

On May 6, there will be a workshop for science and health writers to inform them about occupational health issues, especially those relating to workers' reproductive health and rights. Attendance will be by invitation only.

Also planned for September 1981, there will be a meeting open to the general public, Working Women—Designs for Workplace Health. Designed particularly for feminists, trade unionists, and environmentalists, this is aimed at providing a forum for discussions, ideas, and displays on improving health conditions in the workplace. Manufacturers of protective clothing and equipment will be invited to set up booths to demonstrate their wares, while groups advocating protective equipment will have an opportunity to display their ideas.

A highlight of the conference will be a fashion show of personal protective equipment designed especially for women, to be modeled by local union members.

The third conference, scheduled for the fall, is designed for scientists interested in the problems, possibilities, and progress in mutagenicity and teratogenicity testing. It is planned to generate four workshop reports and recommendations for future research. About 50 invited participants will attend.

For further information on the series, write to conference consultant Penny Ashwanden at WOHRC. ☐

Right to Know *continued from page 1*

The law requires the New York State Department of Health to develop factsheets for employers and employees about every single one of these chemicals. The department says that it will begin with those found most commonly in the workplace and will print other factsheets on demand.

Since many large industrial employers within the state already provide their employees with information about chemical hazards, the state information programs will focus on smaller employers.

WOHRC director Dr. Jeanne Stellman is a member of the Technical Advisory Committee on implementation of the new law.

California to adopt standard

The new California statute, the Hazardous Substances Information and Training Act, directs the State Division of Occupational Safety and Health (DOSH) Standards Board to adopt a standard by July 1, 1981, that will require employers to inform their employees of the presence and health effects of hazardous substances in the workplace.

The present draft of the standard, now being written, would have employers request from manufacturers and maintain a file of Material Safety Data Sheets (MSDS) for each hazardous substance used. Employers would be required to notify workers of the availability of the sheets and to allow them, their representatives, physicians, and DOSH personnel timely access to them. The law mandates that employees also receive "information on the contents of the MSDS . . . or equivalent information, either in written form or through training programs. . . ."

Rather than relying on the NIOSH list, as the New York law does, the California law directs the State Director of Industrial Relations to establish a list of hazardous substances and periodically update it, subject to the approval of the State Division of Occupational Safety and Health Standards Board.

The Michigan law requires employers to reveal all chemicals used, not only those that are hazardous, while the Maine act relies on an OSHA list of toxic substances, requiring those present in the workplace to be labeled as hazardous. The Connecticut law applies only to carcinogens.

Although workers are theoretically guaranteed the "right to know" about toxic substances under the federal Occupational Safety and Health Act of 1970, there is presently no federal OSHA standard which requires employers to list chemical substances present in the workplace and their effects. Only in a few federal OSHA standards relating to specific chemicals, such as lead, is there a requirement that workers be told that a dangerous substance is present. ☐

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