

Birchwood Success Story

Birchwood Construction Company has found the use of MIOSHA services to be not only the answer to having an effective safety and health program, but also the key to keeping their doors open!

*By: Tom Swindlehurst
Construction Safety Consultant
Consultation Education & Training Division*

After having their workers' compensation insurance cancelled in July 2000, the Birchwood Construction Company was forced to pay exorbitant insurance rates in order to stay in business. They turned to MIOSHA's Consultation Education and Training (CET) Division for help.

According to Birchwood Construction Company Safety Coordinator **Dave Heinz**, "We didn't know what to do or where to turn. When we found MIOSHA it was like finding a gold mine for us. We went from losing our workers' compensation insurance and paying fines, to being sought after by insurance carriers, in just over three years! Our success is a result of the help we received from MIOSHA's CET Division construction safety consultants." In that three-year period of time, Birchwood Construction grew from 70 to 130 full-time employees.

Birchwood Construction Company is a well-established, high-end residential building con-

tractor serving northwestern Michigan. A typical house built by Birchwood Construction is in excess of 3,000 square feet. Dave Heintz, a Licensed Master Electrician, manages the Electrical Division of Birchwood Construction and also has the responsibility of being the company's Safety Coordinator. When asked to comment for this article, Heintz responded that he felt lucky to have found this service, because the CET Division was willing to respond to the company's specific needs, and the consultation and training services provided were free.

He also remarked that the people he dealt with at CET were very professional, knowledgeable, and concerned about his company's problems. "They really made a difference," Heintz said. "For the first time in our company's history we had a MIOSHA enforcement inspection and passed it without incurring a fine. Our people are not getting hurt, and if we do have an injury, we have learned to thoroughly investigate the causes of it to prevent such incidents in the future." In addition, Heintz stated that for every dollar the company has spent on safety they have seen a return of approximately five to six dollars.

BSR Director **Doug Kalinowski** has dedicated the MIOSHA program to making a difference in the safety and health of Michigan's workers. "I strongly believe that a positive safety and health culture does not stand alone. It is reflective of an overall positive workplace culture with respect to quality, productivity and efficiency," said Kalinowski. "Ultimately all of these issues positively affect a company's bottom line."

Cont. on Page 17



Dave Heinz, Safety Coordinator, Birchwood Construction Company, credits MIOSHA CET services with helping their company stay in business.

In This Issue

Director's Column	2
Welsh Auditorium Fatality	3
IMCO Recycling - SHARP	4
Spray Operation Proves Fatal	5
Carbon Monoxide Exposure	6
The Bottom Line	7
Transportation Manufacturing	8
Safety & Health Systems	9
Ventilation Challenges	10
Michigan FACE	11
New CET Grants	12
Education & Training Calendar	13
Standards Update	14
Variations	16
Recordkeeping Changes	16

Michigan Department of
Consumer & Industry Services
Bureau of Safety & Regulation

From the Bureau Director's Desk

By: *Douglas J. Kalinowski, Director
Bureau of Safety & Regulation*



Making a Difference with Comprehensive Outreach Services

MIOSHA Outreach

When many people hear about the MIOSHA Program, they think only about our enforcement activities. While MIOSHA will always maintain a strong regulatory presence, we have had and will maintain, substantial resources dedicated to consultation, education and training.

Our Consultation Education & Training (CET) Division includes more than 50 field staff that provide on-site consultations, seminars, training programs, outreach materials, and information on the BSR website. This division serves as a point of contact where any employer or employee can request help or advice dealing with nearly all occupational safety and health issues.

From the beginning of the MIOSHA program, our motto has been: "We will educate before we regulate." For each and every major initiative, the MIOSHA program works very hard to provide a significant level of outreach.

Many Michigan employers have realized, often through the help of our consultants, that effective safety and health programs and systems reduce workplace injuries and illnesses. While this alone is enough of a reason to implement such prevention programs, other benefits also emerge. These include:

- Savings in workers' compensation costs,
- Improvements in employee morale,
- Decreases in absenteeism,
- Increases in productivity.

The president of a Western Michigan company, that made substantial improvements in their safety and health systems, stated that the cost savings did not stop with the obvious ones. While costs reached a plateau of a very low level, improvements in productivity continued at a remarkable rate.

I strongly believe that a positive safety and health culture does not stand alone. It is reflective of an overall positive workplace culture with respect to quality, productivity and efficiency. Ultimately, all of these issues positively effect a company's bottom line.

Our cover article features a remarkable story about Birchwood Construction Company. A company that made strides in employer safety and health which resulted in tremendous savings and ultimately in impressive growth.

While the magnitude of Birchwood's success is uncommon, many companies have discovered the positive effects of safety and health efforts. While MIOSHA can help in these outcomes, the foundation of these successes is the strong commitment and

hard work of the managers, supervisors and employees that work in these companies. Examples of such successes are outlined in every issue of the MIOSHA News.

Employers and employees, working with our dedicated, knowledgeable staff where needed, can have a tremendous impact on the safety and health of these employees, and ultimately, the bottom line. The MIOSHA program will continue to work with all of Michigan's employers and employees to help make a difference.

MIOSHA Reorganization

We in the MIOSHA Program are continually looking for ways to improve all of our services. To this end, we have initiated a two-part reorganization.

The first part of this reorganization is the combination of the General Industry Safety, the Construction Safety, the Occupational Health and the Employee Discrimination Divisions into two divisions – the General Industry Safety and Health Division and the Construction Safety and Health Division.

The new Chief of the General Industry Safety and Health Division is **John Brennan**, who can be reached at 517.322.1831. The new Chief of the Construction Safety and Health Division is **Bob Pawlowski**, who can be reached at 517.322.1856.

The other part of this reorganization is the combination of the various units that provide bureau-wide services into a single Management and Technical Services Division. This division will include standards development, data collection and analysis, Freedom of Information Act request processing, laboratory services, equipment maintenance, information technology and financial services. The new Chief of this division is **John Peck**, who can be reached at 517.322.1817.

While we expect to see a number of improvements across the bureau from these changes, the primary benefits include:

- Improved consistency,
- Enhanced program and administrative efficiencies, and
- Seamless services.

We will experience some growing pains as changes are made, but we expect that you will all see improvements as we alter our operations using the most effective and efficient methods to carry out our responsibilities. Our overall goal is to provide the best assistance to Michigan employers and employees so that you can provide the safest workplaces in this country.

Douglas J. Kalinowski

WELSH AUDITORIUM FATALITY

Five Companies Cited for Worker Fatality at Welsh Auditorium Demolition in Grand Rapids

On Sept. 25, 2003, CIS Director David C. Hollister announced the conclusion of the investigation of a fatal work accident at Welsh Auditorium with MIOSHA citations and penalties against five companies totaling \$69,500.

On June 18, 2003, Erhardt Construction employee Adam Petruska was buried under a mass of demolition debris and fatally injured. At that time, employees from five different companies were working on the demolition of Welsh Auditorium, as part of an expansion and renovation project. The construction manager for the project was Erhardt/Hunt, Joint Venture. The other four companies were: Erhardt Construction; Hunt Construction, Inc.; Pitsch Companies, Inc.; and Allied Electric.

“Demolition work is extremely hazardous and there are clear-cut MIOSHA safeguards to protect these workers,” said Director Hollister. “It is very apparent from our investigation that there was a tragic lack of communication between Erhardt/Hunt Joint Venture and the other employers, which resulted in the placement of workers in a zone of danger.”

MIOSHA Demolition Standard

MIOSHA Construction Safety Standard, Part 20., Demolition, covers the demolition of structures and the safeguarding of the employees in these operations. The standard specifically requires an employer to make daily inspections to detect hazards and unsafe conditions, and to ensure employees are not permitted to work where hazards exist. It also requires employers to allow only those employees necessary to the operation of mechanical demolition equipment in the demolition area; and that in-

side the structure, only a means of egress designated by the employer shall be used, and it shall be guarded to protect workers from falling debris.

A typical construction site involves many contractors and sub-contractors, and the Welsh Auditorium demolition project was no exception. On multi-employer sites, every employer has responsibility for the safety of all workers on the site, and more than one employer may be citable for the same condition.

“These five employers had no coordinated plan to protect the workers against the multiple dangers found at this demolition site,” said BSR Director Doug Kalinowski. “Employers must exert all due diligence to identify hazards, whatever the cause, and take all necessary measures to prevent these types of accidents to their workers.”

Fatality Description

In preparation for the implosion of the auditorium, Pitsch Companies employees were mechanically tearing out balconies, removing seating and fixtures, and removing pre-cast concrete. They were also manually removing concrete blocks near the steel trusses, so explosives could be planted near the trusses. Two Caterpillar excavators were removing the debris, as well as doing some mechanical demolition.

Although the auditorium was being demolished, the lobby was to be saved. To protect the lobby, employees were building a temporary wall to separate the lobby from the auditorium. On the day of the fatal accident, an Erhardt supervisor directed two carpenters to finish construction of the wall, which was near an escalator stairwell.

The workers entered through an undesignated means of egress in the basement and walked up the escalator to their worksite. Because a wall encased the escalator area, the carpenters were not aware that demolition work was occurring on the floor above them. Nor were the demolition workers aware there were workers directly un-



Police and fire rescue workers coordinated the search for worker Adam Petruska, who was fatally injured during the demolition of Welsh Auditorium when accumulated demolition debris collapsed into the escalator stairwell.

der their demolition site.

While one worker went to the basement to retrieve a tool, Petruska remained at the top of the escalator. At approximately 9:30 a.m., the accumulated demolition debris collapsed into the escalator stairwell. The remaining carpenter immediately notified his supervisor of the debris collapse and a search was initiated for Petruska. After 30 minutes, police and fire rescue were notified. More than 30 construction workers assisted police during the rescue attempt. With the help of a canine search dog, Petruska’s body was located at about 6:30 p.m.

MIOSHA Citations

As a result of the accident investigation conducted by the MIOSHA Construction Safety Division, five companies received citations for alleged safety violations with total proposed penalties of \$69,500. The classification and proposed penalties are as follows:

Company	Proposed Penalties	Total Penalties
Erhardt/Hunt, Joint Venture		
Four Serious Violations	\$5000	\$20,000
Erhardt Construction		
Four Serious Violations	\$5000	\$20,000
Hunt Construction, Inc.		
Four Serious Violations	\$5000	\$20,000
Pitsch Companies, Inc.		
One Serious Violation	\$5000	\$5,000
Allied Electric		
Three Serious Violations	\$1500	\$4,500
Total Penalties		\$69,500

The companies have 15 working days from receipt of the citations to comply or contest the violations and penalties.



In preparation for the implosion of Welsh Auditorium, workers were mechanically tearing out balconies, removing seating and fixtures, and removing pre-cast concrete. The accumulated demolition debris collapsed into the escalator stairwell, fatally injuring worker Adam Petruska.

IMCO Recycling Receives First SHARP Award

IMCO Recycling Inc.’s Coldwater South Plant has become the first facility in the state to receive the prestigious Michigan Safety and Health Achievement Recognition (SHARP) Award for an exemplary safety and health management system. MIOSHA established the SHARP program to recognize employers that have achieved safety and health excellence far beyond their peers.

On Aug. 11, 2003, BSR Director **Doug Kalinowski** presented the SHARP Award to General Manager **Claude Dubé** and Division Safety and Health Manager **Brady Myers**, who accepted the award on behalf of all 85 Coldwater South Plant workers. State and local elected officials, corporate leaders, as well as MIOSHA representatives, were on hand to congratulate employees and management on their outstanding achievement.

“I am honored to present the first Michigan SHARP Award to the IMCO Coldwater South Plant,” said Kalinowski. “Foundries are inherently high-hazard workplaces. You are to be applauded for your outstanding achievement to create a work environment that eliminates hazards and protects workers.”

Helping High-Hazard Employers

The Michigan SHARP Program targets small, high-hazard employers—to help them develop, implement and continuously improve the effectiveness of their workplace safety and health management system. SHARP provides an incentive for employers to emphasize accident and illness prevention by anticipating problems, rather than simply reacting to them.

“We are very proud of this achievement, which recognizes our commitment to make the Coldwater South Plant a safe workplace,” said Dubé. “It is the result of teamwork between all of our workers and management to prevent injuries and illnesses, which has dramatically reduced our related work-comp costs.”

The MIOSHA Onsite Consultation Program

within the Consultation Education and Training (CET) Division operates the Michigan SHARP Program. Onsite consultants work with employers to help them become self-sufficient in managing occupational safety and health. SHARP worksites earn an exemption from “programmed” MIOSHA inspections on a yearly basis.

Reducing Injury and Illness

IMCO management believes that sound environmental, health and safety practices lead to excellent product quality, an efficient workforce and continuity of operations. The MIOSHA evaluation team found significant management commitment to carry out the safety goals formalized in the corporate mission statement.

The South Plant’s Standard Industrial Classification (SIC) Code is 3341, *Secondary Smelting and Refining of Nonferrous Metals*, which is classified as a high-hazard industry. The plant’s incidence rates are well below the national average for their SIC code. The Total Case Incidence Rate for the South Plant was 7.6 in 2001 and 3.3 in 2002—compared to 12.8 and 18.4, respectively, for the Bureau of Labor Statistics (BLS) industry average. The Total Days Away/Restricted Cases for the South Plant was 2.2 in 2001 and 2002—compared to 7.3 and 8.9, respectively, for the BLS industry average.

As part of their safety and health management system the South Plant has conducted a Job Safety Analyses (JSA) for each process used in the plant. They have developed safe procedures for every operation and provided safety training for all procedures. They have also conducted a personal protective equipment hazard assessment for the plant, to make sure workers are appropriately protected.

Increasing Employee Involvement

Over the past several years, employee involvement has become an integral component of the their safety and health program. CET consultants have worked with the company to enhance the functions of their safety committee, so that it is accessible to all employees and provides a mechanism for employees to raise safety concerns, and to have those



Employees and guests celebrated the presentation of MIOSHA’s first Sharp Award to IMCO Recycling’s Coldwater South Plant.

concerns addressed.

Self-inspections are also a vital component in the South Plant’s safety and health management system. The South Plant Safety Committee performs monthly inspections to make sure each job function is being conducted safely. In addition, hourly employees fill out daily, weekly and monthly safety and health checklists. Along with the self-inspections, the company has also had CET consultants and private consultants perform safety inspections.

Producing a Quality Product

IMCO Recycling Inc. is the world’s largest recycler of both aluminum and zinc, and operates 22 U.S. production facilities, as well as five international facilities located in Brazil, Germany, Mexico and Wales. The IMCO Coldwater South Plant recycles more than 180 million pounds of aluminum scrap annually. On a daily basis, their workers handle several hundred thousand pounds of molten aluminum, reaching over 1400° F.

Principal customers of the IMCO aluminum operations include major aluminum companies, as well as automobile manufacturers and their suppliers. These customers use most of the metal recycled by the company to manufacture products for transportation, packaging, and construction—the three largest aluminum markets.

IMCO’s basic corporate purpose, as a part of the environmental industry’s recycling sector, is to provide services to industry to reclaim valuable materials for reuse. This process provides savings in energy, raw materials and landfill capacity, all of which reduce industry’s impact on the environment. Their website is: <http://www.imcorecycling.com>.



(Front) Doug Kalinowski, John Vanlieu, Doug Scherer, Chay Herman, Brady Myers, Claude Dubé, Gary Barnett. (Back) Bruce Caswell, Gregory Moore, Robert Rumsey, Jack Rubley, Nora Elkins, Howard Simmons, Mike Lofton, Chris Passamani, Steve Lucas, Larey Cole.

Spray-on Truck-bed Liner Operation Proves Fatal

By: Barton G. Pickelman, CIH
Industrial Hygienist
General Industry Safety & Health Division

Fatality Summary

This year the MIOSHA program investigated a fatality related to the spraying of truck-bed liners. The spray-on truck-bed liner product contained a very toxic chemical, methylene bisphenyl isocyanate (MDI). This article provides information on isocyanate use, the hazards associated with isocyanates, steps to take to protect yourself, and contact information for the MIOSHA Consultation Education & Training (CET) Division, which provides free assistance to employers in the State of Michigan.

The fatality occurred at a small auto and truck accessory and detailing shop that purchased the franchise rights to apply the spray-on truck-bed liner product. The individual spraying the product had a previous acute exposure to the MDI and had become sensitized.

Due to inadequate training on the hazards of isocyanate use, the individual was not aware of this increased sensitivity. In addition, the facility did not have a spray area with appropriate ventilation and had inadequate respiratory protection for the employees. When a subsequent exposure to the MDI occurred, it caused a fatal asthmatic reaction.

This unfortunate fatality may have been prevented if *any* of the following would have been in place:

- Adequate training of employees on the hazards of isocyanate exposure;
- Sufficient ventilation inside a spray room or booth;
- Respiratory protection that was properly selected, used, and maintained;
- Medical surveillance program for employees exposed to isocyanates.

What are isocyanates and how are they used?

Isocyanates are a group of highly reactive and toxic compounds used in the manufacture of urethanes, foams, fibers, and coatings such as paints and varnishes. Isocyanates are also found in the new and rapidly expanding business of spray-on truck-bed liners. The application of the spray-on truck-bed liner involves mixing a two-part product and spraying the polymerizing liquid onto a cleaned and scuffed truck bed.

MIOSHA has established permissible exposure limits for the isocyanate compounds methylene bisphenyl isocyanate

(MDI) and toluene-2,4-diisocyanate (TDI). Both MDI and TDI have permissible exposure limits of 0.02 parts per million.

What are the hazards associated with isocyanates?

Immediate or acute effects of exposure to isocyanates include eye, nose, throat, and lung irritation, and allergic sensitization. Acute effects may also include stomach upset, vomiting, tightness in the chest, and possibly fevers.

Repeated exposure to low concentrations or a single exposure to high concentrations of isocyanates may result in skin rashes, permanent breathing problems including asthma, and hypersensitivity. Isocyanate exposure sensitizes workers making them subject to severe asthma attacks if they are exposed again, even at concentrations below the MIOSHA permissible exposure limits.

In extreme cases, death can occur from the severe asthma attacks in sensitized individuals. If employees develop any lung symptoms consistent with isocyanate exposures, they should not be allowed future exposure to any amount of an isocyanate until a physician has determined they are at no additional risk.

How do you protect yourself and others from exposure to isocyanates?

Education and Training

An adequately trained workforce, including management and employees, is the first step in reducing or eliminating the hazards associated with the use of an isocyanate containing material. MIOSHA Hazard Communication standards require employers to provide employees with information and training on any hazardous chemical in the work area.

The training should include the location of the material safety data sheets (MSDSs), methods to detect the presence or release of a hazardous chemical, the health hazards associated with any hazardous chemical, and measures the employees can use to protect themselves from these hazards.

Exposure Assessments

Employers must determine their employees potential exposure to MDI or TDI. This will allow employers to evaluate engineering controls such as ventilation in

order to reduce exposures to as low as reasonably achievable and aid in the selection of appropriate respiratory protection. The permissible exposure limits are found in the MIOSHA Part 301, Air Contaminants standard.

Adequate Ventilation

Ventilation is probably the most important engineering control when combating exposures to an isocyanate or other air contaminant. The MIOSHA Part 528, Spray-finishing Operations standard, requires that all spray-finishing operations be performed inside of an appropriate spray room or booth. In addition to providing ventilation, a spray room or booth also provides a work area that is easily restricted to only properly trained and equipped employees.

Respiratory Protection

Respiratory protection should not be the first line of defense to protect employees from isocyanate exposure or for that matter any air contaminant. Engineering controls such as ventilation should be designed and utilized to reduce exposure to as low as reasonably achievable before relying on respiratory protection. The requirements employers must meet before placing employees in respirators can be found in the MIOSHA Respiratory Protection standard.

The odor threshold, the level at which an individual can smell an isocyanate, is higher than the permissible exposure limits. In other words, if an employee smells the sweet, fruity, pungent odor of an isocyanate, they are probably overexposed. That is why the recommended respiratory protection for employees exposed to an isocyanate is usually a full-face supplied air respirator and not an air purifying respirator (filter cartridge style). The problem with the air puri-

Cont. on Page 19



Apparatus used during spray-on truck-bed liner operations.

CARBON MONOXIDE EXPOSURE

By: Eric Zaban, Industrial Hygienist
 Consultation Education and Training Division

Fatalities resulting from carbon monoxide (CO) exposure are among the top causes of work-related deaths. Agriculture, construction and general industry employees are exposed to carbon monoxide when using fuel-burning equipment indoors. This toxic gas may become dangerously elevated if the equipment is not tuned and ventilation is inadequate.

Industrial lift trucks, automobiles, man lifts, floor burnishers, generators, power washers, compressors, concrete cutters and concrete trawlers are some examples of fuel-burning equipment that emit this toxic gas. With a combination of engine tuning (preventive maintenance), mechanical exhaust ventilation, exposure monitoring, and employee training, employers can ensure exposures remain below Michigan's permissible exposure limit (PEL) of 35 ppm for an eight-hour time weighted average.

Warning Signs of CO Poisoning

The National Institute for Occupational Safety and Health (NIOSH) has recommended immediately dangerous to life and health (IDLH) concentration is 1200 ppm. This lethal poison is colorless, tasteless, odorless and non-irritating. Excessive exposures cause weakness and confusion and exposed individuals may have trouble seeking safety. Indoor air contamination levels may rise quickly, even in relatively open spaces with ventilation. Therefore, it is imperative that employers train employees to recognize sources and warning signs of CO poisoning; light-headedness, dizziness, nausea, headache, visual disturbances, changes in personality, and confusion.

In addition, employees who use fuel-burning equipment indoors should be made aware of the medical attention required when employees become poisoned. Victims of CO poisoning should be removed from the exposure and given oxygen. Placement in a hyperbaric chamber may be necessary in cases of severe poisoning.



Industrial lift trucks, because of their prevalence, are one of the chief sources of carbon monoxide in the workplace.

Maintaining Low CO Emissions

Carbon Monoxide is one of many chemicals found in engine exhaust. Industrial lift trucks, because of their prevalence, are one of the chief sources of CO in the workplace. Generation rates vary with vehicle power and fuel type. When feasible, electric-powered vehicles or tools should be used. Liquid propane gas (LPG) and compressed natural gas (CNG) are better fuel choices than gasoline or diesel, although all produce CO.

To achieve good vehicle performance while maintaining low CO emissions, vehicle engines should be in good working condition and properly tuned. Employers should request lift truck maintenance providers tune their vehicles to limit CO production. Tuning fuel-burning equipment for substantial reductions in CO emissions can be accomplished with minimal reduction in power.

Specifically, engine maintenance tuning should include:

- Use proper-sized carburetors designed for optimum air and fuel mixture balance.
- Service the air cleaner regularly.
- Adjust engine timing per manufacturer's specifications.
- Use a CO analyzer when adjusting the fuel system.

Preventing CO Poisoning

In 1996, NIOSH published an Alert, *Preventing Carbon Monoxide Poisoning from Small Gasoline-Powered Engines and Tools*, with the following recommendations for employers and equipment users:

- Do not allow the use of gasoline-powered equipment inside buildings or partially enclosed areas unless exhaust is located outside (where it will not be drawn indoors and away from air intakes).
- Learn to recognize the signs and symptoms of CO overexposure.
- Use personal CO monitors equipped with audible alarms to warn workers when CO is excessive.

■ Substitute less hazardous equipment.

■ If an employee has symptoms, turn off equipment and go outdoors. Call 911 for medical attention – **Do not drive a motor vehicle.**

In addition, the Alert recommends equipment manufactures and rental agencies:

- Place warning labels on fuel-powered tools.
- Tell customers the equipment should not be used indoors.
- Have portable, audible CO monitors available for rent or purchase and encourage their use.
- Provide recommendations for

equipment maintenance to reduce CO emissions.

- Recommend safer tools for the intended use.

Limiting CO Concentrations

The American Conference of Governmental Industrial Hygienists (ACGIH) publication *Industrial Ventilation* recommends specific dilution rates to maintain CO exposures below the limits:

- 5000 cfm/ propane-fueled lift truck,
- 8000 cfm/gasoline-fueled lift truck,
- 500 cfm/operating automobile,
- 10000 cfm (or more)/ operating truck,
- 100 cfm/horsepower for diesel-fueled vehicle.

These exhaust rates assume a regular maintenance program that limits CO concentrations of gases to 1 percent for propane-fueled trucks and 2 percent for gasoline-fueled trucks. These rates also assume vehicles are only used for half of the work day, good distribution of air flow, space volume is greater than 150,000 ft³/lift truck, and trucks are powered by engines of less than 60 HP. If operating conditions vary from these assumptions, the ventilation rate must be increased. Local exhaust ventilation that captures exhaust at the source is practical for service garages. Any ventilation system must have adequate make-up air to operate effectively.

Investigating CO Complaints

Health compliance investigations may result from an employee complaint or other reports of excessive CO exposure. Employers are required to perform Right-to-Know training when employees are significantly exposed to any air contaminant. A typical CO investigation includes direct tail pipe measurements with detector tubes and employee exposure monitoring with toxic gas meters (dosimeters).

Air contamination levels for past exposure incidents may be reliably estimated by analysis of an exposed individuals blood or breath. The Coburn equation is used by industrial hygienists to calculate past theoretical exposure levels by considering variables including percent carboxyhemoglobin (%COHb), the time of the blood test, and the times of the exposure event. For example, after someone is exposed to 100 ppm of CO for eight hours, %COHb analysis four hours after the exposure may be 18 percent. The normal %COHb level for a nonsmoker is less than 2.5 percent.

In conclusion, employers are responsible to maintain air contamination concentrations within the limits required by Part 301 *Air Contaminants*. If use of electric-powered equipment is not feasible, awareness training, preventive maintenance, exposure monitoring, and adequate exhaust ventilation must be provided to ensure exposures are below the limits. By training employees on the symptoms of and medical responses to CO poisoning, employers can avoid an otherwise reversible illness from progressing to permanent neurological damage or death. ■

The Bottom Line

Workplace Safety and Health Makes Good Business Sense

Gilbert Residence

The Gilbert Residence is a highly respected provider of nursing home and assisted living services for senior citizens in Ypsilanti, Michigan. Established by the estate of Mr. William H. Gilbert, The Gilbert Residence has given a home and health care to hundreds of residents since 1960, mostly from the Ypsilanti area.

From the early days through today, they have enjoyed unparalleled support from residents, families and friends in their mission of helping older people live to their highest potential as individuals who seek good health and personal fulfillment. The longevity of their employees and trustees is a tribute to the respect they have for their residents, and their desire to continue offering their residents and the Ypsilanti community “the best care anywhere.”

Governor's Quality Care Awards

Since 1998, the Governor's Quality Care Awards have recognized outstanding state-licensed child-care homes and centers, before/after school programs, nursing homes, hospices, homes for the aged and adult foster care facilities.

The Gilbert Residence received a Governor's Quality Care Award in 1998 and again in 2002. Rules prohibit facilities from being nominated for three years after receiving the award. Each year, nearly 1,000 nominations are received, with about 75 winners chosen. The winners are looking for new and innovative ideas to raise the level of care even further.

Safety & Health Culture

Gilbert Residence has about 65 full- and part-time staff including: licensed nurses, certified nursing assistants, activity personnel, registered dietitian, kitchen staff, resident assistants, laundry and housekeeping staff, etc. Because a dedicated staff is critical to their industry, Gilbert Residence has a significant safety and health program to help retain staff.

A number of years ago their annual workers compensation premium was almost \$100,000. They gradually reduced it to as low as \$25,000. They don't believe there is one simple answer-- they have found success by developing a culture of safety and health among all staff.

Some of their safety and health activities include:

- Promote an active Safety Committee.
- Conduct Safety Mini Sweeps – Members do safety checks in each other's departments.

- Conduct Outside Safety Sweeps – They do this as a group twice a year, covering the entire grounds. It affects the safety of both residents and employees.

- Conduct safety in-services.

- Conduct incident reviews with the employee(s), to identify causes and find out how to avoid repeating problems.

- Retrain and reeducate employees who have been involved in accidents/incidents.

- Allow injured employees to return to light duty work whenever possible to shorten their time off the job.

- Use safety posters, especially with pictures of their employees on them, to remind of unsafe or safe practices. This makes a good contest periodically to design new ones.

- Make safety fun! They have a goal for a specified number of days without a work-loss day, and reward the whole staff if they make it. They design safety shirts, provide prizes, hold luncheons, etc.

Gilbert Residence utilizes MIOSHA consultants and their work-comp insurance company. They aren't afraid to borrow other people's good ideas. CET Safety Consultant Suellen Cook has worked with the company and nominated them for this feature.

“Our residents depend on loyal workers who provide high-quality care 24 hours a day,” said Executive Director Mark Carlson. “Our extensive safety and health program protects our workers, our most valuable resource.”



At a safety luncheon on Oct. 16, Gilbert Residence staff, residents, and family members decorated pumpkins and celebrated their safety achievements.

This column features successful Michigan companies that have established a comprehensive safety and health program which positively impacts their bottom line. An accident-free work environment is not achieved by good luck—but by good planning! Creating a safe and healthy workplace takes as much attention as any aspect of running a business. Some positive benefits include: less injuries and illnesses, lower workers' compensation costs, increased production, increased employee morale, and lower absenteeism.

TRANSPORTATION EQUIPMENT MANUFACTURING

WORKER SAFETY AND HEALTH IS A PRIORITY FOR MIOSHA IN THIS INDUSTRY WHICH REPORTS A 16.7 INJURY & ILLNESS RATE

By: *Martha Yoder, Deputy Director
Bureau of Safety and Regulation*

The new MIOSHA strategic plan continues to focus program resources toward specific industries and types of injuries and illnesses. The newly developed plan for Fiscal Years 2003 through 2008 identifies specific industries, injuries and illnesses for increased program attention. The goal is to reduce injury and illness rates in the targeted areas by 20 percent by the end of the plan.

The transportation equipment manufacturing industry, SIC 37/NAICS 336, is one of the industries identified in the new plan. In Michigan, it is estimated that more than 304,000 people work for transportation equipment manufacturers at more than 1,260 establishments. The work performed by this industry is labor intensive and includes a wide range of stamping, welding, machining, assembly, material handling and related activities. The 2000 Michigan survey of occupational injuries and illnesses reports the total injury and illness case rate for the industry is 16.7, the second highest in the state.

For years, Michigan has been known as a quality producer of transportation equipment including automobiles, fire trucks, commercial vehicles, and recreational vehicles such as motor homes, boats and bicycles. "Made in Michigan" has long meant made with pride and quality, and it must also mean made with the well being of employees foremost in our minds.

While not identified as a target industry in the previous MIOSHA strategic plan, the industry was included in the goal to reduce amputations. Under this goal, the industry was the fo-

cus of increased consultation and training outreach and enforcement activity. MIOSHA will continue to focus significant program resources toward this industry under the plan, which became effective on October 1, 2003.

Looking back five years, MIOSHA has conducted more than 700 inspections in the transportation equipment industry, citing 6,152 violations and assessing nearly \$2.3 million in penalties. Of the violations cited, there have been 22 Willful, 2,798 Serious, 3,231 Other, and 101 Repeat violations. A "repeat" means the same rule was cited within the past two years.

Recent Transportation Accidents

The MIOSHA investigations have included reviewing accidents where employees have been seriously injured, such as the following:

■ **A temporary worker**, on his first shift with the company, was assigned to remove badly seated parts from a double bonder carousel with 24 automatically operated fixtures that heat and press clutch plates together. The hand tool became stuck in a fixture. As he attempted to free the tool from the fixture he inadvertently placed his left hand in another fixture which closed. He was lifted off the floor and was being pulled into another fixture. The stop cable and emergency stop button were out of his reach.

The injured employee braced his feet against the barrier guard and pulled back using his legs for power. Three fingers and part of his hand were amputated. The employer was cited for failing to train a new employee on the procedures, hazards, and safeguards of the job, inadequately guarded pinch point between the upper and lower plates of the fixtures, and lack of training for temporary employees on lockout-tagout.

■ **An employee on the job for just over a month** was unloading empty pallets from a truck. She was moving two stacks of banded pallets to the storage area. The top stack of pallets was loosely bound. As she was moving the pallets to the storage area, the top stack of pallets contacted an overhang and the top four pallets shifted position. The employee stopped the powered industrial truck and left the seat with the motor running. She climbed onto the frame of the truck between the mast and the backrest to adjust the pallets. While standing on the frame, her

foot contacted the tilt control and the forks tilted back on her, pinning her between the mast and the backrest. She was hospitalized with a crushing blow to the chest. The company was cited for inadequate training.

■ **An experienced maintenance technician** had part of his hand crushed while troubleshooting a parts washer. He had removed the bolts from a barrier guard and entered a normally guarded area. He signaled to his partner to restart the machine, however, his right hand was resting on a part. When the machine restarted, it continued the operation from where it had been stopped, pushing the part into the washer and causing the crushing injury. The firm was cited for failing to utilize lockout.

■ **A press operator** had her left ring and index fingers amputated due to the inadequate adjustment of the pull out device. The employer was cited for failing to properly adjust the pull out device at the start of the shift.

All of these accidents provide examples of
Cont. on Page 18

Transportation Equipment (SIC 37, NAICS 336) Top Ten Rules Cited by MIOSHA

(August 1, 1998 – August, 2003)

1. **1910.147(c)(4)(i)** Develop document and utilize lockout procedures.
2. **408.10034(09)** Guard pinch point or otherwise protect the employee exposed to contact.
3. **408.10727(I)** Provide guard for belt and pulley seven feet or less above floor or platform.
4. **1910.303(g)(2)(i)** Assure that live parts of electric equipment operating at 50 volts or more are guarded against accidental contact.
5. **408.10015(3)** Maintain floor free of slip and trip hazards.
6. **408.3312(I)** Assure use of appropriate eye protection.
7. **1910.1200(f)(5)** Label containers of hazardous material.
8. **1910.1200(e)(I)** Develop, implement and maintain a written hazard communication program.
9. **408.3308(I)** Conduct PPE assessment.
10. **408.0034(3)** Provide point of operation guard or device.

MIOSHA standards are available on our standards website at: www.michigan.gov/mioshastandards. You can also call the MIOSHA Standards Section at 517.322.1845.



This Lacks Enterprises, Inc., employee is readying parts for packaging. A tilt conveyor was designed by Lacks staff that eliminates overextending when the worker places the part on the far side of the conveyor.

Building an Effective... Safety and Health Management System

By: *Richard Zdeb, Safety Consultant
Consultation Education and Training Division*

Make no mistake about it—it is the employer that bears the responsibility for providing a workplace free of recognized hazards. As a result in the 1980s, OSHA and MIOSHA developed basic criteria for a safety and health management system, and identified five key elements. These five elements are:

- 1) Management commitment,
- 2) Employee involvement,
- 3) Worksite analysis,
- 4) Hazard recognition and control, and
- 5) Employee training.

These elements have been integrated into the MIOSHA inspection process, and today are used as an assessment tool for all MIOSHA visits, both enforcement and consultation.

In the 1990's, MIOSHA commissioned a study that reviewed the safety and health management systems of employers with both high incidences and low incidences of workers' compensation claims. The Hunt Study, as it was called, reinforced federal OSHA's findings. Employers that had low amounts of work-comp claims had incorporated the five key elements into their management practices.

More often than not, there is confusion between the recognizing the need for these elements and actually implementing them. Questions are asked about the best ways to institute a wide variety of safety and health programs, such as: confined space, personal protective equipment (PPE), and hazard communication. Since the responsibility for the safety and health management system remains with employers, the approach chosen for implementation differs from company to company.

There are several methods that can be used to implement an effective safety and health management system. Each begins with the corporate culture and management commitment. The ability of management to communicate with their employees is the key. We will take a look at four different approaches that companies use to implement these five key elements.

The Traditional Approach

In this approach, management appoints a safety and health director. This person is given the responsibility to implement, direct and control the five key elements. The success of this approach is dependent on the choice of the safety and health director and the level of management commitment.

More often than not, this person is asked to wear many hats. The safety and health responsibilities are just one of many duties in their job description. As a result, there is a correlation between the amount of time that the person spends on safety and health activities and the effectiveness of the safety and health system management.

In addition, the safety and health director's academic background may be an issue. Many have an academic background in human resources, quality assurance, or plant management. They have limited knowledge, if any, of MIOSHA standards. Their familiarity with safety and health issues is limited to internal company safety and health policies and procedures. Generally they only become familiar with MIOSHA standards after an accident or a MIOSHA compliance inspection.

Breakdowns in this approach occur when the job responsibilities change, when people leave the organization, and/or when downsizing and consolidations occur. This approach puts significant emphasis on the person and not on the system.

The ISO Approach

This approach applies the European concepts that have been successful in business systems management. The International Organization for Standardization (ISO) is the world's largest developer of standards, which are used to make the development, manufacturing and supply of products and services more efficient, safer and cleaner. In today's global business climate, ISO certification has become synonymous with high quality. As these quality assurance concepts have become more widely accepted and understood, they have been applied to safety and health management systems.

In this approach, management and employee commitment is a given. Written procedures are developed in a team framework. Training is given to all employees regarding the safety and health management system. Built into the system is a set of checks and balances that will detect and take appropriate corrective action, if a failure occurs.

A major concern is that this approach, more

often than not, is customer driven. In order to do business, a company has to implement these ISO procedures and meet independent auditor certification requirements. If the company does not implement these customer requirements, then, employers will not be able to quote on jobs. Correspondingly, the message sent to employees is, if we don't do it, our jobs are in jeopardy.

However, as employers become familiar with these concepts and their implementation, the emphasis on customer demands decreases. The advantages become apparent to both management and employees, and a higher level of systems performance evolves. Specific requirements necessary to meet the key elements of a safety and



Three Dimensional Services Health & Safety Team Members, Rochester Hills: Alan Peterson, Vice President & GM; Mike Finta, Plant Engineer; Laura Rea, HR Director; Jim Carafelli, Maintenance; Ed Crosswell, Plant Manager; and CET Consultant Richard Zdeb.

health program are referenced in future levels of ISO certification. Needless to say, this approach can and has been effective, not necessarily for the right reasons.

The Behavior Based Safety (BBS) Approach

This systemic approach to safety and health has achieved some degree of success, and some degree of controversy. After appropriate training, employees are asked to be observers. The observers identify unsafe acts and/or unsafe conditions. The observers are empowered to take corrective action regarding these safety- and health-related issues.

During the implementation process, the key elements of a safety and health management system are emphasized. Employees, both management and hourly, are encouraged to volunteer and

Cont. on Page 19

Ventilation Challenges

The 53rd Industrial Ventilation Conference will provide attendees with expert information to protect their workers and enhance the air quality of their workplace

*By: John W. Hodgson, CIH
District 2, Industrial Hygiene Manager
General Industry Safety & Health Division*

Mention mold, heat stress, employee exposure, toxic chemicals, building security, comfort, etc. and most people will not associate these issues with ventilation. However, proper ventilation design, construction and maintenance can be an essential means to eliminate, control or otherwise mitigate these and other concerns in the work environment. Industrial ventilation is not a hi-tech, headline making, flashy subject. It is a mature field with proven means of controlling and maintaining air quality, humidity, temperature and other factors.

Since ventilation is not “flashy,” a major challenge is getting employers interested enough to invest the time and money in training. A legitimate question is, “Why should I invest in this training?” In the following paragraphs are some of the reasons why knowledge about ventilation is so important.

Avoiding an Ineffective Ventilation System

A small ventilation system consisting of several hoods, ductwork, fan and collector can easily cost more than \$20,000 and this does not include operating and maintenance costs. Unfortunately, I have seen too many cases where either in-house personnel or a contractor have designed and installed ineffective ventilation systems. They are ineffective in terms of performing the desired task, as well as maintenance and operational costs.

I cannot overemphasize this point, it oc-

curs very commonly. Imagine purchasing a ventilation system needed to minimize employee exposure to an air contaminant and then discover employee exposure has actually increased or not appreciably decreased. In the worst case that I have witnessed, a company spend \$70,000 on a ventilation system that did not reduce the operator’s exposure. A properly designed system may cost no more than a poorly designed system. Moreover, the maintenance and operational costs of a well-designed system can be thousands of dollars less per year than a poorly designed system.

Why are there so many badly designed ventilation systems? Unless your personnel have expertise in industrial ventilation, this avenue of design is almost always a disaster. It is commonplace for companies to have personnel that can fabricate something that appears to be a ventilation system, but it is rare for the end results to be effective. Managers would shudder at the thought of someone planning a new process or building a new machine without proven ability, let alone no ability. However, in far too many cases, the same cannot be said of ventilation system design.

If a system is going to be designed or fabricated in-house, then it should be done correctly or the company is wasting resources. There are also contractors within the ventilation industry that are not knowledgeable about “industrial ventilation.” This pitfall can be avoided by having the ability to review the proposal; does it look reasonable. Understanding the nomenclature of ventilation is needed

to communicate with the contractor during the planning, construction and testing stages. Without this ability, it is not possible for the company to make an informed choice when choosing a vendor.

Changing Your Ventilation System

Inevitably, a new hood and additional ductwork are added to an existing system or other changes are made to the system. This is often done without much foresight into how it will affect the functioning of the system. How will the change affect the air-

flow at the other hoods? Will it cause settling of particulates in the ductwork? Can the airflow rate of the fan be increased, if so, how much? Is the motor big enough, how much additional horsepower will it use at the higher airflow rate? Can contaminated air reenter the building? These are some of the questions to be answered when making changes.

Most companies do not consider the outcome of changes made to a ventilation system. Like other things not planned, the results are usually bad. In part, this is due to the false idea that since it is only air being moved, it will easily go anywhere desired. After all, any ductwork connected to any fan will move some amount of air. However, just having some amount of air movement is not the desired end point of the ventilation system. The proper selection of the hood type, ductwork, fan and collector are necessary to achieve a system that performs well and is economical to operate and maintain.

Consider a very small system that has an airflow rate of 2,000 cubic feet of air per minute (cfm). At 2,000 cfm, about 9,000 pounds of air are being moved per hour. Your company may not move this much product in an hour. Material handling is very important to the success of various companies. We know that raw materials, intermediates and the final product will not allocate themselves to certain areas and processes without planning and direct intervention.

An employer knows the number of parts or the pounds of material produced or other means used to measure productivity. Generally, employers do not know the total volume of air exhausted from their facility or what the system is actually accomplishing given the amount of air exhausted or how much it is costing them to move the air and heat the replacement air. This is an area that is often completely overlooked and where the savvy employer can save a lot of money.

Providing Good Ventilation for Employee Health

In addition to all of the economic reasons for good design, employee comfort and health are the most important reasons for providing good ventilation. After all, this is the purpose of most ventilation systems. Employee job satisfaction, turnover, productivity, are all related to the work environment. My profession gives me the ability to see just about any place of employment.

Cont. on Page 11



At this bronze foundry, the hood does not effectively capture the fumes released by the pouring operation.

MICHIGAN FACE

Work-Related Fatality Prevention Through Research and Investigation

By: Deb Chester, MS
Industrial Hygienist
MSU Department of Medicine

Aren't work-related fatalities just "accidents?" The answer is, No! Most work-related deaths are not accidents. An accident is defined as "an unforeseen and unplanned event or circumstance." The vast majority of work-related deaths can be foreseen and are preventable.

Any future work-related fatality is preventable if the underlying causes of a past fatality can be identified. When the causes are identified, prevention strategies can be developed and distributed to key stakeholders who can affect workplace and work practice changes, thus "foreseeing" the cause and providing prevention.

The Michigan Fatality Assessment and Control Evaluation (MIFACE) is a research program that conducts surveillance of all work-related deaths in the state of Michigan. We are one of 15 states that have a cooperative agreement with the National Institute for Occupational Safety and Health (NIOSH) to do this work. MIFACE goals are:

- To identify the types of industries and work situations that are at an increased risk of fatalities,
- Identify the underlying causes of the work-related fatality, and
- Develop and distribute prevention strategies to prevent similar work-related deaths.

MIFACE is not interested in placing fault or blame; we are interested in finding out what caused the death. There are no enforcement actions, citations or penalties associated with a MIFACE investigation. To find out the causes of a work-related fatality, MIFACE seeks the voluntary cooperation of the parties involved in the fatality to gather information about what was happening before, at the time of, and right after the fatal injury. This information is gathered during a site visit to

the employer and, if the fatal injury occurred off-site, a visit to the incident site. All information gathered by MIFACE is kept confidential to the extent permitted by law.

After the site visit, MIFACE writes an investigation report that provides a detailed narrative of the incident, the causes of the fatality and prevention strategies that can be implemented to reduce or eliminate the possibility of a recurrence. The MIFACE investigation report does not contain personal identifiers such as the name of the company or the name of the deceased.

The MIFACE work-related fatality surveillance program began in 2001. Since that time, many companies in a variety of industry sectors have granted permission for MIFACE to conduct a site investigation. After the written report is reviewed by experts in the field, the report is posted on the MSU College of Human Medicine's Occupational and Environmental Medicine program website at: www.chm.msu.edu/oem/. These educational reports can be accessed, downloaded and used in employee health and safety training, in workplace hazard assessment, and as a template for work practice changes.

Examples of current reports on the website include:

- 01MI011 Machinist struck and killed by fragments from ruptured steam turbine housing.
- 01MI022 Truck driver died in excavation cave-in during diesel tank removal.
- 01MI025 Deliveryman struck by vehicle while stopped on roadway to change van flat tire.
- 01MI056 Grader operator run over by rear tire while jumpstarting grader.
- 02MI028 Rigger killed when equipment being unloaded from a semi-trailer fell from the



A skid steer operator was fatally injured during the construction a stone wall. After the operator placed a rock, the skid steer went off the edge of the embankment, overturned, and landed in a pond.

high-lift fork truck and landed on him.

In addition, there are shorter summaries on the website where a full MIFACE investigation was not conducted. Examples of these summaries include:

Case 08. Temporary worker killed when he was struck by a roll-off dumpster being unloaded from a trailer.

Case 10. Worker killed when the wheel of a skid-steer loader crushed his head.

Case 14. Welder died when mold he was welding on exploded.

Employers must notify MIOSHA of all workplace fatalities by calling their 24-hour hotline at 800.858.0397 within eight hours of the incident. MIOSHA will notify the MIFACE program. Personnel from the MIFACE program will contact the employer about conducting a voluntary investigation.

The MIFACE investigation complements the MIOSHA investigation. While the MIOSHA investigation is focused on assessing the presence of violations of safety and health regulations, the MIFACE investigation is focused on collecting and disseminating information on workplace fatalities to prevent repetition of similar tragedies in the future.

If you have any questions about the MIFACE program, please call Deb Chester at 517.353.1846; or e-mail her at debra.chester@ht.msu.edu. ■

Ventilation Challenges

Cont. from Page 10

Observing different companies, in the same business, is very interesting. The spectrum often ranges from excellent environments with long-term employees to companies with poor work environments and excessive employee turnover. Obviously, there are many reasons for these differences, but rarely have I seen a successful company that did not have a good work environment.

Our Challenge to You

The challenge does not lie in finding the

principles of good ventilation design; the challenge is educational. Getting air to move is not hard, but getting air to move in a manner that actually accomplishes something takes planning. In its simplest terms, this is the purpose of the 53rd Industrial Ventilation Conference. Hopefully, you are convinced of the importance of good ventilation, if not, please consider the comments received from conference attendees. For over fifty years, there has been overwhelming praise for the value of the information presented at this conference. I hope you will join us for this year's conference. ■

53rd Annual Industrial Ventilation Conference

February 9 - 12, 2004
Kellogg Hotel & Conference Center
Michigan State University
East Lansing, Michigan

Conference Registration
517.394.4614
866.423.7233

New CET Grants

Governor Announces \$1 Million for Worker Safety and Health Grants

By: Jerry Zimmerman
CET Grant Administrator

On Sept. 3rd, Governor Jennifer M. Granholm announced the state has awarded 19 Consultation Education and Training (CET) Grants totaling \$1 million to promote workplace safety and health in Michigan.

“Manufacturing matters in Michigan because that is the backbone of our economy. I’m proud to announce this significant investment in Michigan’s future,” said Granholm. “These grants offer employers the tools to protect their workers. And we know that creating a safe and healthy work environment positively impacts a company’s bottom line.”

The MIOSHA (CET) Division provides direct staff assistance to employers in a variety of formats. The CET Grant program provides additional options for safety and health education and training to employers and employees.

Most of the grants will focus on the performance goals identified in the MIOSHA strategic plan, with a particular emphasis on hazard recognition and prevention for high-hazard manufacturing industries. Other strategic plan areas include: construction safety, ergonomics training, hearing conservation, and training for healthcare and nursing home workers.

Construction is one of the most hazardous industries in Michigan. Although about four percent of Michigan’s workforce is employed in construction, 40 percent of work-related fatalities occur in this industry. A significant number of these grants will provide construction safety training.

The U.S. Bureau of Labor Statistics reported that the deaths of Hispanic workers increased by 53 percent from 1992 to 2000, while the rate for every other group (whites, Native Americans, African Americans and Asians) decreased by as much as 10 percent. Hispanics are the fastest growing ethnic group in the U.S., and often experience the worst working conditions. This year a CET grantee will provide bilingual safety and health training to Spanish-speaking workers.

Other grants include: workplace violence prevention, fleet safety, Rapid Intervention Team training for firefighters, logging safety, safety and health training for new workers, and safe work practices for agricultural workers.

The 19 statewide projects will include a wide range of training activities and proficiency levels. Many of the grants will offer interactive computer-based training modules and may include: text, video, interactive questions, and retention testing.

FY 2004 CET Grant Projects

Alpena Community College will provide targeted safety training in three key areas- manufacturing, construction, and health care/long-term care. Additionally it will obtain and share detailed survey data from four key employers that received CET training, to demonstrate the impact of the training. They will work with Sunrise Side Safety Council to identify best practices and training methodologies.



Great Lakes Fabricators provides advanced training for ironworkers and operating engineers.

Associated General Contractors will continue to provide an interactive computer-based training program for the construction industry. The program is designed to provide easy access to 14 standardized modules which include: Asbestos Awareness, Confined Space, Electrical Safety, Fall Protection, Hazard Communication, Lockout/Tagout, PPE, Trenching and Shoring, Scaffold Safety, and Lead Safety.

Bay de Noc Community College will provide statewide training and services for the wood harvesting and wood using industries with emphasis on sawmills and secondary wood manufacturing. On-site presentations will emphasize hazard awareness, personal protective equipment, chain saw safety, safe work habits, sound ergonomic practices and proper lockout procedures.

Center for Workplace Violence Prevention will develop and produce a videotape entitled “How to Implement a Violence Prevention Sys-

tem for your Company.” The purpose for the video is to provide practical information, formal content and guidelines for employers to structure and implement a violence prevention system in their company.

Great Lakes Fabricators will provide an advanced training program designed to expand and upgrade the knowledge and experience of ironworkers and operating engineers for the safe erection of structural steel. The project consists of a structural steel frame that can be erected in four configurations, and will create life-like scenarios encountered on the job.

Lansing Area Safety Council will provide safety and health training to employees in long-term care facilities. Topics will include aggressive behavior, bloodborne pathogens and tuberculosis awareness, ergonomics, slips, trips and falls, hazard communication, and safe lifting and transfer of patients/proper use of lifting equipment.

Michigan Chiropractic Council will provide back safety and ergonomics training to workers in the nursing home, manufacturing and construction industries. Prior to conducting the on-site training, the facilitators will observe and conduct an on-site evaluation of the workplace. The WorkSafe program is designed to increase employee awareness of ergonomics injuries.

Michigan Farm Bureau will provide training that targets agricultural employers, managers, service providers and owners. The project will provide realistic hazard identification guidance and minimization practices utilizing computer and DVD formats. Hosting facilities will be provided with on-site surveys to determine safe work practices and possible hazards.

Michigan Road Builders Association will provide interactive style presentations, workshops and courses for contractors, management, supervisory and line workers. The training will include Heavy/Highway Contractor Update; “Safety Day” Presentations; Excavation, Trenching and Shoring; and Technical Assistance, both onsite and by phone (as requested).

Michigan State AFL-CIO will provide generic and customized training to new employees and incumbent workers affected by new technology and new work processes, equipment or operation. Training topics will include back injuries, lifting techniques, workplace hazards and recognition, and right-to-know.

Michigan State University/Labor Program Service will provide train-the-trainer courses in Rapid Intervention Team (RIT) training. These trained personnel can then go back

Cont. on Page 17

Education & Training Calendar

Date	Course Location	MIOSHA Trainer Contact	Phone
December			
3	Elements of a Safety & Health Management System Saginaw	Richard Zdeb Dan Matthews	888.238.4478
9	Power Lockout, JSA & Industrial Machine Guarding Ann Arbor	Suellen Cook Ray Grabel	734.677.5259
9	When MIOSHA Visits Shelby Township	Lee Jay Kueppers Kathy Ashley	586.731.3476
10	How to Conduct a Self Inspection to Identify Hazards Westland	Linda Long Toni Herron	734.427.5200
11	Lockout/Tagout: The Control of Hazardous Energy Sources Monroe	Jennifer Clark-Denson Vicki Sherman	734.384.4127
11	Guarding for Manufacturing Jackson	Quenten Yoder Bill Rayl	517.782.0061
16	When MIOSHA Visits Dearborn Heights	Linda Long Lisa	313.317.1500
January			
8	Recordkeeping of Occupational Injuries & Illnesses Lansing	Deb Gundry Sandy Long	517.394.4614
13	Recordkeeping of Occupational Injuries & Illnesses Shelby Township	Lee Jay Kueppers Kathy Ashley	586.731.3476
13	Recordkeeping, Accident Investigation & Work-Comp Strategies Westland	Linda Long Toni Heron	734.427.5200
14	Guarding for Manufacturing Ironwood	Dan Maki Jim Lorenson	906.932.4231
14	When MIOSHA Visits Southfield	Richard Zdeb Wendy Shepan	248.353.4500
15	Recordkeeping of Occupational Injuries & Illnesses Lansing	Deb Gundry Sandy Long	517.394.4614
20	Guarding for Manufacturing Howell	Karen Odell Janie Willsmore	517.546.3920
21	Recordkeeping of Occupational Injuries & Illnesses Grand Rapids	Micshall Patrick Penny Mollica	616.698.1167
22	Elements of a Safety & Health Management System Monroe	Jennifer Clark-Denson Vicki Sherman	734.384.4127
27	Steel Erection Workshop: Construction Safety Standard, Part 26 Midland	Tom Swindlehurst Ron Munson	989.496.9415
27, 28, 29	Safety & Health Administrator Course Belleville	Suellen Cook Janet Millard	734.697.1415
28	Industrial Ventilation Escanaba	Bob Dayringer Jayne Szukalowski,	906.786.5802
28	Bloodborne Infectious Diseases Escanaba	Jenelle Thelen Jayne Szukalowski	906.786.5802
28 & 29	MIOSHA 10-Hour for Construction Saginaw	Tom Swindlehurst Carole Hemminger	989.793.1120

Co-sponsors of CET seminars may charge a nominal fee to cover the costs of equipment rental, room rental, and lunch/refreshment charges. For the latest seminar information check our website, which is updated the first of every month: www.michigan.gov/miosha.

Construction Safety Standards Commission

Labor

- Mr. Tom Boensch
- Mr. Daniel Corbat
- Mr. Andrew Lang
- Mr. Larry Redfearn

Management

- Ms. Cheryl Hughes
- Mr. Peter Strazdas*
- Mr. Edward Tanzini
- Mr. Timothy Wise

Public Member

- Mr. Kris Mattila

General Industry Safety Standards Commission

Labor

- Mr. James Baker
- Mr. Tycho Fredericks
- Mr. John Pettinga
- Vacant

Management

- Mr. Michael L. Eckert
- Mr. Timothy J. Koury*
- Mr. Thomas Pytlik**
- Mr. George A. Reamer

Public Member

- Ms. Geri Johnson

Occupational Health Standards Commission

Labor

- Dr. G. Robert DeYoung
- Ms. Cynthia Holland
- Capt. Michael McCabe
- Ms. Margaret Vissman**

Management

- Mr. Robert DeBruyn
- Mr. Michael Lucas
- Mr. Richard Olson
- Mr. Douglas Williams

Public Member

- Dr. Darryl Lesoski*

*Chair **Vice Chair

Standards Update

Agriculture Rules Updated

Effective August 19, 2003, OH Part 700., Agriculture, R 325.2401- 325.2448, has been revised to correct outdated numbers and other formatting issues. These are not new rules for the agriculture industry. They originated during pre-MIOSHA years (1974) through the Occupational Health Division of the Michigan Department Public Health, and cover various subjects such as: air contaminants, ventilation, illumination, respiratory protection and noise protection. Gradually, other General Industry and Construction rules replaced these rules, leaving agriculture as the only application. (See R 325.50171(2) for application citation.)

You may wonder why they have not been included in the standard sets for the agriculture industry, along with the other currently listed 21 MIOSHA standards. The Office of Regulatory Reform mistakenly listed R 325.2401- 325.2448 under the domain of the Department of Environmental Quality during the 1996 Governor's Reorganization Project. Now these rules correctly reside in the domain of the Department of Consumer and Industry Services, Bureau of Safety and Regulation, and have a new and more appropriate title. For the first time they will be included in the Agriculture set of standards, labeled "Section D" in the index. These rules can be viewed or printed from the website at: www.michigan.gov/mioshastandards. Look under "Agriculture" and then go to "Part 700," or contact the Standards Section at 517.322.1845.



Governor Appoints New Construction Safety Standards Commissioners

Governor Jennifer M. Granholm announced three appointments to the Construction Safety Standards Commission on September 5th. The commission provides rules and establishes safety standards for construction operations to protect the life and safety of construction workers in Michigan.

MIOSHA welcomes these new commissioners to the important responsibility of overseeing standards promulgation. We also express enormous gratitude to those commissioners who are retiring.

Tom Boensch, of Saginaw, is currently the secretary/treasurer of the Michigan State Building and Construction Trades Council. He is a Vietnam era veteran and volunteer for the Saginaw City Rescue Mission and Habitat for Humanity. Boensch is appointed to represent construction operations on the employee level for a term expiring March 18, 2004. He succeeds Martin Ross of Traverse City who has resigned.

Larry Redfearn, of Southfield, is currently district skilled trades manager for Detroit Public Schools. He is a licensed master plumber with over 25 years in construction and maintenance. Redfearn is appointed to represent construction operations on the public employee level for a term expiring March 18, 2006. He succeeds Carl Davis of Detroit whose term has expired.

Timothy B. Wise, of Commerce, is currently the vice president of operations for Dumas Construction Services. He is chair of the Equal Business and Employment Opportunity Committee for the Association of General Contractors, Greater Detroit Chapter and former member of the Michigan Minority Business Development Council. Wise is appointed to represent construction operations on the management level for a term expiring March 18, 2006. He succeeds Charles Gatecliff of Brighton whose term has expired.

To contact any of the Commissioners or the Standards Section, please call 517.322.1845.

Status of Michigan Standards Promulgation

(As of September 8, 2003)

Occupational Safety Standards

General Industry

Part 08.	Portable Fire Extinguishers	Approved by Commission for review
Part 17.	Refuse Packer Units	Approved by Commission for review
Part 19.	Crawler, Locomotives, Truck Cranes	At Advisory Committee
Part 20.	Underhung and Monorail Cranes	Approved by Commission for review
Part 58.	Vehicle Mounted Elevating & Rotating Platforms	Approved by Commission for review
Part 62.	Plastic Molding	Approved by Commission for review

Construction

Part 01.	General Rules	Approved by Commission for review
Part 07.	Welding & Cutting	Approved by Commission for review
Part 08.	Handling & Storage of Materials	Approved by Commission for review
Part 12.	Scaffolds	Approved by Commission for review
Part 14.	Tunnels, Shafts, Cofferdams & Caissons	Final, effective 2/27/03
Part 16.	Power Transmission	Approved by Commission for review
Part 18.	Fire Protection & Prevention	Final, effective 9/18/02
Part 25.	Concrete Construction	Informal approval by ORR
Part 26.	Steel and Precast Erection	Final, effective 9/18/02
Part 30.	Telecommunications	Approved by Commission for review
Ad Hoc	Communication Tower Erection	Approved by Commission for review

Occupational Health Standards

General Industry

Part 350.	Carcinogens R 2301-2302	Final, effective 9/27/02
Part 431.	Hazardous Work in Laboratories	Final, effective 8/5/03
Part 501.	Agricultural Operations	Final, effective 12/11/02
Part 525.	Grinding, Polishing & Buffing	Final, effective 4/1/03
Part 700.	Agriculture	Final, effective 8/19/03

Construction

Sanitation for Construction R 6615	Consolidated with CS Part 1
Illumination for Construction R 6605	Consolidated with CS Part 1

Administrative Rules

Part 11. Recording and Reporting of Occupational Injuries and Illnesses	Final, effective 12/3/02
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The MIOSHA Standards Division assists in the promulgation of Michigan occupational safety and health standards. To receive a copy of the MIOSHA Standards Index (updated October 2003) or for single copies and sets of safety and health standards, please contact the Standards Division at 517.322.1845.

RFR Request for Rulemaking
 ORR Office of Regulatory Reform
 LSB Legislative Services Bureau
 JCAR Joint Committee on Administrative Rules

MIO SHA RECORDKEEPING RULES

MAJOR CHANGES

MIO SHA recordkeeping rules were revised in 2002, with major changes. Below are the most common recording errors.

OLD: Prior to January 1, 2002 **NEW:** Beginning January 1, 2002

MIO SHA FORMS

OLD: MIO SHA Form 200 - Log and Summary
 MIO SHA Form 101 - Supplemental Record
NEW: MIO SHA Form 300 - Log of Work-Related Injuries & Illnesses
 MIO SHA Form 300A - Summary of Work-Related Injuries & Illnesses
 MIO SHA Form 301 - Injury & Illness Incident Report

DAY COUNTS

OLD: Count scheduled workdays lost with no 'cap' on count.
NEW: Count calendar days including weekends and holidays.
NOTE: The count may stop at 180 days.

NEEDLESTICKS

OLD: Record only if the case results in medical treatment, days away, days restricted or sero-conversion.
NEW: Record all incidents that result from sharps potentially contaminated with blood or infectious material.

POSTING

OLD: Post annual summary during month of February.
NEW: Post Form 300A from February 1 to April 30.

PARKING LOTS

OLD: Were not considered part of the work environment, so instances were not recordable.
NEW: Are now considered part of the work environment, so incidents in parking lots **are recordable**.

HEARING LOSS

OLD: 10 dB shift or more was recorded in column 7(f).
NEW: Incidents should be recorded in column M5.
NOTE: Effective January 2003, there must be a STS shift of 10dB **and** a 25dB greater than audiometric zero for an incident to be recordable.

EDIT CHECK

OLD: Columns A-G must equal columns 8-13.
NEW: Columns G-J must equal columns M1-M5.

DAYS AWAY LOG ENTRY

OLD: Check columns 2 and 3, and enter the number of days away in column 4.
NEW: Check column H only, and enter the number of days in column L.

DAYS RESTRICTED LOG ENTRY

OLD: Check column 2, and enter the number of days in column 5.
NEW: Check column I only, and enter the number of days in column K.

DAYS RESTRICTED & DAYS AWAY LOG ENTRY

OLD: Check column 2 and 3, and enter the days away in column 4, and days restricted in column 5.
NEW: Check column H only, and enter days away in column L, and days restricted in column K.

Recordkeeping questions should be directed to the **MIO SHA Information Section** survey staff at **517.322.1848**. ■

V a r i a n c e s

Published October 29, 2003

Following are requests for variances and variances granted from occupational safety standards in accordance with rules of the Department of Consumer & Industry Services, Part 12, Variances (R408.22201 to 408.22251).

Variances Requested Construction

Part number and rule number from which variance is requested

Part 32 - Aerial Lift Platforms: Rule R408.43209, Rule 3209 (8) (b) and R408.43209, Rule 3209 (9)

Summary of employer's request for variance

To allow employer to firmly secure a scaffold plank to the top of the intermediate rail of the guardrail system of an aerial lift for limited use as a work platform, provided certain stipulations are adhered to.

Name and address of employer

Barton Malow Company

Location for which variance is requested

Crittenton Hospital, North & South Addition, Rochester Hills

Name and address of employer

John E. Green Company

Location for which variance is requested

Crittenton Hospital Medical Center, Rochester Hills

Variances Granted General Industry

Part number and rule number from which variance is requested

Part 17 - Refuse Packer Units: Rule 1732(1)

Summary of employer's request for variance

The employer has requested to utilize an interlocked gate in conjunction with stop bars and uniform trash carts in lieu of the fixed barrier.

Name and address of employer

Circuit Control Corporation, Petoskey

Location for which variance is requested

2277 M-119 Hwy, Petoskey

Part number and rule number from which variance is requested

Part 17 - Refuse Packer Units: Rule 1732(1)

Summary of employer's request for variance

Employer has requested to use an interlocked gate in conjunction with wheeled trash carts, a stop bar, cart rest, and other requirements in lieu of the fixed barrier guard on a refuse packer unit.

Name and address of employer

Amway Grand Plaza Hotel

Location for which variance is requested

187 Monroe Avenue NW, Grand Rapids

Upper Michigan Safety Conference

Date: January 28 & 29, 2004

Location: Bay College M-TEC in Escanaba

Cost: \$39 (one day) & \$59 (two days)

Registration Information

Jane Szukalowski: 800-221-2001 x 1510

Mary Diettrich: 800-221-2001 x 1227

Website: www.baycollege.edu

Birchwood Construction

Cont. from Page 1

Construction is one of the most hazardous industries in the nation and Michigan. Although only about four percent of Michigan's workforce is employed in construction, 40 percent of work-related fatalities occur in this industry. The single most important thing construction employers can do to protect their employees is to have a comprehensive accident prevention program. An effective accident prevention program that protects employees takes commitment, energy and resources. But such a commitment can pay big dividends.

The turnaround at Birchwood began when Heintz contacted the CET Division to seek their assistance with developing a safety and health program. Within six months of the initial contact, the company had a basic safety program in place. Heintz was not satisfied, however. He wanted to do more for his workers and for the company. The CET Division consultants advised him that in order to have a first-rate safety program, it was essential to *coordinate* and to *maintain* the program. Coordinating the program means there's a system in place that the entire management team understands and they all follow the same procedures. In order to coordinate his company's program, Heintz sent eight of the company's managers to a MIOSHA ten-hour safety and health seminar in Cheboygan. As a result of the positive feedback from the company's managers, he then requested an in-house seminar for all of the company's 30 foremen.

Maintaining a safety program over time is essential to its success. Heintz has made the effort to maintain his safety program by utilizing ongoing training sessions. In addition, the company has had several CET on-site surveys over the past three years. As a result of CET Division training, they have learned to identify hazards and make the necessary corrections.

Heintz stated that he thinks there should be as many people doing the consulting for MIOSHA, as there are doing enforcement. "It is apparent that companies in Michigan need to know what is required by MIOSHA and how to comply with the requirements, and that's what MIOSHA consultants know best." Under the direction of the new CET Division Chief **Connie O'Neill**, construction consultant positions are fully staffed and have been increased to two on-site consultants and three traditional consultants.

Birchwood Construction Company is just one of many companies who have found the CET Division willing and able to help them. Our mission is to help companies comply with the MIOSHA Act, which in part says that an employer shall provide for his or her employees a place of work that is free of recognized hazards. We have experienced construction safety professionals available, but it's up to employers and employees to request our free services. For more

information, or to request CET services, please contact the CET Division at 517.322.1809.

"CET's vision is to help employers make employee safety and health a value linked with every activity or priority in a work culture," said O'Neill. "We can make a difference, together we can assist in reducing injuries and death in the workplace." ■

CET Division Construction Safety Services

The single most important thing that construction employers can do to protect their workers is to have a comprehensive accident prevention program. An effective accident prevention program that protects employees takes commitment, energy and resources.

The CET Division provides consultants who can help employers across the state address the hazards associated with the construction industry. To request CET Division construction safety services, please call 517.322.1809.



Bill Gasser
Construction
Onsite
Consultant



Debra Johnson
Construction
Safety
Consultant



Patrick Sullivan
Construction
Safety
Consultant



Rich Sumner
Construction
Onsite
Consultant



Tom Swindlehurst
Construction
Safety
Consultant

CET Grants

Cont. from Page 12

to their fire department and train their employees. The training will be directed to firefighters, officers, and fire chiefs because all fire service personnel have RIT responsibilities.

North Central Michigan College will provide occupational safety and health training to employers and employees in the seven counties served by North Central Michigan College. They will design, develop and deliver targeted safety training for nursing and personal care facilities, building construction and plastic industries.

PASSES will work with Michigan Construction Teachers Association and other construction trade schools, to provide training for construction technical students in the classroom. They will also deliver a web-based training program using the PASSES Edge curriculum and offer it to technical schools.

SEMCOSH will provide safety and health training to Spanish-speaking, immigrant workers. The training will focus on Basic First Aid, Hearing Protection, Personal Protective Equipment, Ergonomics and General Safety. Training will also promote healthy and safe worksites for immigrant workers.

Traffic Safety Association will develop four training tools for fleet companies and CET consultants. They are: Development of a safety program based on "Best Practices"; Development of an introductory PowerPoint presentation on fleet safety; Development of a standardized data collection tools/forms; and Development of an audio-visual traffic safety-training program.

United Auto Workers (UAW) will provide a five-step training program for manufacturing companies. It will include: identifying workplaces for assistance, a walkthrough of the facility and development of a customized training program, delivery of the program, evaluation and follow-up, and technical assistance.

University Of Michigan will provide on-site customized introductory ergonomics seminars, ergonomics job analysis, follow-up activities to document workplace changes and development of ergonomic programs to 10 small- and medium-sized Michigan companies.

Wayne State University will continue to implement a twelve-month safety training program using the CD ROM-based *Safe2Work* training package. The courses are interactive, self-paced curricula that allow the worker to study and be tested on the environment they are studying.

Research Project—Bay de Noc Community College will continue to measure and quantify the average noise level exposure of employees in the wood products industry. The data will be used to: Establish more accurate industry standards for hearing protection; Assist in the creation of more comprehensive hearing conservation programs; and Increase worker awareness of noise level hazards. ■

Transportation Equipment

Cont. from Page 8

the hazardous work performed in the transportation service industry and the need for diligent attention to ensuring worker safety.

Most Frequent MIOSHA Violations

Below are the most frequently identified MIOSHA violations during the past five years.

Machine Guarding

A variety of rules addressing machine guarding were identified during MIOSHA safety inspections, making this the most significant hazard category. More than 1,300 machine guarding violations have been cited including those contained in General Industry Safety Standards Parts 1, General Provisions; Part 7, Guards for Power Transmission; Part 26, Metalworking Machinery; and Part 24, Mechanical Power Presses.

Lack of adequate point of operation guarding, unguarded pinch points, belts and pulleys, chains and sprockets, and rotating and reciprocating parts are the most frequently identified inadequacies.

Generally, machines which run continuously and present a hazard to employees at the point of operation are required to be fully safeguarded in a manner which prevents the entry of any part of an employee's body into the hazard zone during machine cycling.

General requirements also include guarding pinch points which occur when an employee can become caught between moving parts of a machine, between moving and stationary parts, or between material and any part of the machine. Pinch points must be guarded so that employees are not exposed.

Belts and pulleys must be guarded when located within seven feet from the floor or when located over a passageway. Gears, sprockets, chain drives, revolving and reciprocating parts must be guarded when exposed to contact.

Mechanical Power Presses

Of serious concern is guarding of mechanical power presses. MIOSHA's General Industry Safety Standard Part 24, Mechanical Power Presses, details the requirements for safe operation of full-revolution and part-revolution power presses. It includes requirements for training, inspections, construction of press components, point of operation safeguarding, as well as die design, construction, setting, and feeding.

Frequently identified concerns with mechanical power press safety include lack of press inspections, training of die-setters, maintenance and press operators, and maintaining proper safety distance.

Mechanical power press point-of-operation guards or devices must be provided for every production operation performed on a press. Part 24 provides specific details on acceptable guarding for full and part revolution presses, including a table with acceptable point-of-operation openings.

Attention must also be given to guarding any

pinch points created by conveyors, parts chutes, or other auxiliary equipment.

Lockout-Tagout

The number one rule violation identified has been the lack of or deficiencies in lockout-tagout procedures. Equipment and machinery must be locked out when employees are performing servicing or maintenance work in which the unexpected energization or start up of the machines or equipment, or a release of stored energy, could cause injury to employees.

The provisions of the lockout-tagout standard apply when any of the following situations exist:

- An employee must either remove or bypass machine guards or other safety devices, resulting in exposure to hazards at the point of operation;

- An employee is required to place any part of his or her body in contact with the point of operation of the machine or piece of equipment; or

- An employee is required to place any part of his or her body into a danger zone associated with a machine operating cycle.

Hazard Communication-Employee Right to Know

The most frequently cited provision of the Hazard Communication standard is the requirement for a written Right to Know program. Often a program is found to exist, but to have inadequacies such as a missing or incomplete chemical list due to a change in products. Another program inadequacy occurs when the person designated as responsible for the program changes, but the program is not updated.

Employee information and training is also frequently cited provision of the standard. Under the standard, employees must be trained on the chemicals they will be using prior to initial assignment. High turnover rates or rapid expansion of staff have been identified as reasons for employees working without proper training.

Housekeeping

Housekeeping is an ongoing concern in most manufacturing facilities. Oils, mists, scrap, and debris accumulates quickly and must be cleaned regularly. In addition, stacking of materials must be done in a manner which does not create the possibility of hazards due to falling boxes or material.

Electrical Safety

The need to guard live parts of electrical equipment operating at 50 volts or more against accidental activation is commonly cited. This includes doors of electrical panels left open, and unused openings in electrical panels not covered.

Powered Industrial Trucks

Operators of powered industrial trucks

must be selected, trained and licensed by the employer following the requirements of the standard.

Lack of a valid operator permit is the most often identified deficiency. A second frequently identified deficiency has been the lack of wheel chocks. A highway truck and trailer must have the brakes set and not less than two rear wheels blocked or be restrained by other mechanical means installed in a manner that will hold the trailer from movement when being boarded by a powered industrial truck.

Personal Protective Equipment (PPE)

The need for personal protective equipment must be assessed by analyzing the hazards of each type of job in the facility. Lack of appropriate eye protection was the number one PPE issue identified.

Attention must also be given to ensure that new employees are trained on the hazards, duties, and safeguards of the job prior to initial assignment.

Ergonomic Issues

In addition to the above, ergonomics is a major concern for this industry. Employers are encouraged to conduct an assessment to identify jobs or work conditions that may cause undue strain, localized fatigue, discomfort or pain. Job tasks that involve activities such as repetitive and forceful exertions, frequent heavy or overhead lifts, awkward work positions, or use of vibrating equipment should be evaluated for possible ergonomic problems.

It is recommended that engineering controls be used when possible to reduce or eliminate hazards. Ergonomically designed hand tools, workstations, material lifting devices can help eliminate hazards. Designing work areas that do not require employees to work in awkward positions, use repetitive movements or forceful exertions can reduce the risk of cumulative trauma and musculoskeletal disorders.

Safety & Health Management System

Employers are encouraged to analyze their workplace to develop and adopt a comprehensive safety and health management system. Several studies, including one in Michigan, have documented the critical difference these systems make between employers with high injury rates and those with low rates.

MIOSHA CET Services

Michigan employers in the transportation equipment industry can take advantage of the services available from the Consultation Education and Training (CET) Division. The CET Division has sample safety and health, lockout-tagout, Right to Know, and ergonomic programs available at no charge.

In addition, consultants are available to visit worksites to provide training, review programs and make recommendations for improvements. To learn more about the services available, please call 517.322.1809. ■

Fatal Truck-bed Liner Operation

Cont. from Page 5

fying respirators is that they will reach a point at which it becomes saturated and will no longer filter out the isocyanate. When that filter breakthrough happens, an overexposure may occur, causing an irreversible sensitization.

Personal Protective Equipment

The eyes and skin of employees working with isocyanate containing products must be protected with the use of protective clothing and equipment. Coveralls, gloves, footwear, and eye protection are some of the things that should be considered when assessing the potential for contact. The MIOSHA Part 433, Personal Protective Equipment standard requires employers to assess their workplace to determine the need for such equipment.

Medical Surveillance Program

It is recommended that employers provide employees exposed to isocyanate compounds with preplacement and annual physical examinations with emphasis on the respiratory tract, including the existence of respiratory conditions such as asthma and smoking history.

Individuals who have become sensitized should be assigned to work areas where there is no expected isocyanate exposure.

How do I get help?

Compliance with the above MIOSHA standards may seem overwhelming at first but compliance is necessary to protect the health and safety of Michigan's workforce.

The good news is that there is free assistance available from the MIOSHA Consultation Education & Training (CET) Division. You may contact the CET Division at 517.322.1809 or visit our website at www.michigan.gov/miosha. ■



Recommended personal protective equipment for employees exposed to an isocyanate includes chemical protective coveralls, gloves, and supplied-air respirators.

Safety & Health Management System

Cont. from Page 9

participate, initially, as observers. As training in the system occurs, all trained employees become active participants. The proposed end result should be—we are all looking out for each other.

Resistance from employees may occur with a breakdown in communication. When unsafe acts occur, employees are counseled, retrained and mentored. The corrective action is to be constructive and positive—but it may result in finger pointing. More often than not, an outside private consultant is needed to implement and monitor a BBS system. It is important to ensure that mixed messages to the participants do not inhibit the positive impact potential of the BBS approach.

The Empowerment Approach

This approach incorporates a basic life principle that is applied to the workplace—an honest concern for the safety and health of each individual. In companies that have achieved the “best of the best” recognition, empowerment is a key component. These are the companies that are recognized as Michigan Voluntary Protection Programs (MVPP) Star companies in Michigan. Safety and health are promoted as a value to the organization. Not only are they doing things right, but it is recognized by management that this is the right way to do business.

MVPP Star companies recognize that it is not about MIOSHA compliance. They recognize that MIOSHA standards are minimum requirements; they choose to go beyond the minimum. The emphasis is on achieving safety and health excellence as part of their normal working environment.

These companies have sought out the opinions, thoughts and ideas of their people, regarding safety and health issues. There no mixed messages. They take the time and make the effort to know and understand what the employees are saying. Subsequent to receiving input from workers, management shares their perspective. Information discussed would include, but not be limited to: compliance with MIOSHA standards, industry best safety practices, and company rules and regulations.

Safety and health issues are integrated into productivity and operations. There is comprehensive safety and health auditing. Staff resources are made available to develop the data necessary for decision-making. No longer are safety and health concerns considered issues, they are opportunities for improvement. As a result they are included in the business planning process and action plans.

At the floor level, safety and health accountability is established. Coaching and counseling is immediate for safety and health violations. For the safety challenged, those that just don't get it, retraining is used to reinforce safety performance.

All training is thorough and understood; measurements are established to demonstrate its effectiveness.

Employees want to make a difference, and employers desperately need them to. Today's workplace needs employees who can make decisions, who can take initiative, and who are accountable for results.

What is empowerment? It is a different way of working together:

- **Employees** feel responsible not just for doing a job, but also for making the whole organization work better. They help plan how to get things done and then do them.

- **Teams** work together to improve their performance continually, achieving higher levels of productivity.

- **Organizations** are structured in such a way that workers feel they are able to achieve the results they want, that they can do what needs to be done, not just what is required of them, and they will be rewarded for doing so. (From: “Empowerment—A Practical Guide for Success”).

An empowered workforce not only takes responsibility for their jobs, but they gain a sense of ownership. Empowerment cannot exist unless individual attitudes and mindsets, team behaviors, and organizational values all support it.

Managers, in an empowered workplace must learn to step back and create an environment that allows each individual to learn, grow, develop, contribute, and excel. The leader/manager must create an environment for performance, learning, and development.

One effective means of utilizing employees in reducing injuries and illnesses is through the development of safety and health work teams. The safety and health professional plays a key role in training employees, providing technical expertise, and being a resource to teams.

Employees are trained in how to recognize hazards and what the MIOSHA requirements are. “Train the trainer” practices are used to enable workers to train their co-workers. Employees learn how to utilize the company's system to develop work orders and track conditions until closure, often with greater success than someone who does not regularly work in the area. Over time, as workers rotate in and out of specific roles within teams—they will build a workforce whose goal is to improve the work and the workplace.

The key to preventing work-related injuries and illnesses is to empower employees and voluntarily involve more workers in programs and processes designed to improve safety and health. CET consultants are available to help employers develop an effective safety and health management system. To request CET services or for more information, please call 517.322.1809. ■

How To Contact MIOSHA

MIOSHA Complaint Hotline 800.866.4674
Fatality/Catastrophe Hotline 800.858.0397
General Information 517.322.1814
Free Safety/Health Consultation 517.322.1809

Director 517.322.1814 **Doug Kalinowski**
Deputy Director 517.322.1817 **Martha Yoder**

DIVISION	PHONE	CHIEF
Appeals	517.322.1297	Diane Phelps
Construction Safety & Health	517.322.1856	Bob Pawlowski
Consultation Education & Training	517.322.1809	Connie O'Neill
General Industry Safety & Health	517.322.1831	John Brennan
Management & Technical Services	517.322.1817	John Peck

OFFICE	PHONE	MANAGER
Asbestos Program	517.322.1230	George Howard
CET Grant Program	517.322.1865	Jerry Zimmerman
Employee Discrimination Section	248.888.8777	Jim Brogan
MIOSHA Information Section	517.322.1851	Bob Clark
Standards Section	517.322.1845	Marsha Parrott-Boyle

Website: www.michigan.gov/miosha

If you would like to subscribe to the MIOSHA News, please contact us at 517.322.1809 and provide us with your mailing address. Also if you are currently a subscriber, please take the time to review your mailing label for errors. If any portion of your address is incorrect, please contact us at the above number.



Bureau of Safety & Regulation
Director: Douglas J. Kalinowski

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Director: David C. Hollister

Consumer & Industry Services
 Bureau of Safety & Regulation
 P.O. Box 30643
 7150 Harris Drive
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