



# MIOSHA NEWS

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Michigan Occupational Safety and Health Administration (MIOSHA)

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## M&W Industries

### MIOSHA Fines M&W Industries of Detroit \$236,890 for Failure to Protect Employees from Amputations and Other Safety Hazards

On June 28<sup>th</sup>, Michigan Department of Labor & Economic Growth (DLEG) Director **Keith W. Cooley** announced the Michigan Occupational Safety and Health Administration (MIOSHA) has cited M&W Industries of Detroit with \$236,890 in proposed penalties for allegedly failing to adequately protect employees from amputations and other safety hazards, and failing to comply with commitments to improve overall safety and health for employees.

#### Six Employee Amputations

Six amputations have occurred at M&W Industries since June 2006:

■ On 01/05/2007, an employee amputated the first three fingers on his left hand while he was operating a hydraulic press;

■ On 12/19/2006, an employee amputated his left ring finger while he was operating a hydraulic squaring shear;

■ On 09/23/2006, an employee nearly severed his left hand (partial amputation) while he

was operating a horizontal band saw;

■ On 06/28/2006, an employee amputated her left index finger while she was operating a hydraulic press;

■ Also on 06/28/2006, another employee amputated his right index finger while he was operating the same hydraulic press as above;

■ On 06/07/2006, an employee amputated his left index finger while he was operating a horizontal band saw.

“M&W Industries has been given ample opportunity to correct the serious hazards which are endangering the health and well being of their employees. Their failure to protect their workers will not be tolerated,” said Cooley. “Not only did M&W Industries not comply with MIOSHA requirements, their continued disregard for employee safety led to six employees suffering amputation injuries since June 2006. We are sending a clear message to all employers that they must be proactive and consistently protect their workers.”

#### MIOSHA Inspections

In 2005, the MIOSHA General Industry Safety and Health Division conducted a planned, wall-to-wall inspection at the 13550 Helen Street location that resulted in 20 Serious, one Willful, eight Repeat-Serious, and 13 Other-than-Serious violations. Because the inspection findings included Willful and Repeat-Serious violations, it is agency practice to conduct a follow-up inspection to ensure that items are corrected and corrections are maintained.

Between March 5, and April 9, 2007, MIOSHA con-



*Bad example: Failure to properly guard band saws led to employee amputation injuries. Guards on band saws need to be adjusted to 1/4-inch of material being cut.*

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Michigan Department of Labor & Economic Growth

## From the MIOSHA Director's Desk

By: *Douglas J. Kalinowski*



## Successful Michigan Employers Are Proactive

John Henshaw, the former head of the Occupational Safety and Health Administration (OSHA) and life-long safety and health professional often said, “When OSHA is responding to an accident, it is too late!” I truly appreciate that statement. Although the ultimate responsibility for worker safety and health lies with both employers and employees, the efforts of MIOSHA, the other state-run OSHA programs and federal OSHA are meant to help prevent workplace injuries, illnesses and fatalities.

This applies to both enforcement and outreach activities. A goal of zero work-related injuries and illnesses is extremely challenging, and creates an expectation that everyone who is associated with a workplace shares responsibility for safety and health and should assume some accountability for prevention.

### Protecting Workers is the Law

The cover article in this issue addresses a number of alleged violations for **M&W Industries**, a southeast Michigan employer – many of which are classified as failure-to-abate and repeat. A significant number of them were serious machine guarding and lock-out violations. MIOSHA field staff also identified six amputations at their plants from June 2006 to April 2007. This number of amputations is disturbing considering the total workforce is less than 600 at these facilities, including management and office staff that were not likely to be exposed to these hazards.

The loss to the employees, and their families, that experienced the amputations or other injuries is immeasurable. Many of the things that we routinely do with our hands every day require all of our fingers and we take them for granted. Assuming a certain degree of recovery, the inability to use their hands undoubtedly lasted for many months. (I know because I needed surgery on a broken thumb a few years ago and it was not useful for quite some time.)

The total monetary costs to the employer are also significant. These include the direct costs associated with workers’ compensation. The indirect costs, which multiply the work-comp figures by a factor of five to ten, include the permanent or temporary loss of trained employees, the training of replacement workers and the potential to negatively affect all of their employees’ morale.

The intent of a significant penalty under MIOSHA (as well as in other state and federal OSHA programs) is not to be punitive or to make up for the workers’ injuries. The intent is to get the specific employer’s attention. The penalties should also get the attention of other employers who might believe the costs of workers’ injuries and illnesses are simply a “cost of doing business.”

### Two Successful Michigan Companies

The most successful companies in Michigan, both manufacturing and non-manufacturing, are almost always the leaders in protecting their employees from safety and health hazards that are likely to cause serious injuries. We see it repeatedly through our Michigan Voluntary Protection Program (MVPP), our Michigan Safety and Health Achievement Recognition Program (SHARP), and other MIOSHA award-winning sites. Not only is protecting employees “the right thing to do,” it significantly impacts every employer’s bottom line.

Two employers, highlighted in this issue as well, have demonstrated that protecting their workers is not only the “right thing to do,” but it makes good business sense. **Herman Miller’s Midwest Distribution Center in Holland** was the 20th Michigan employer to receive MVPP Star status. This facility has implemented a very strong safety and health program with the results demonstrated in injury and illness rates that are less than one-quarter of the state average for their type of business. (See page 3.)

**SKD Automotive Group’s Jonesville facility**, employs 360 workers – and has gone more than three million hours without a lost time accident! The facility uses a “systems approach” to worker safety that compliments other systems designed to enhance productivity and quality. SKD estimates that the return on their investment in workplace safety is \$15 to \$1! SKD has made the corporate decision to spend money on protecting their workers – rather than on the significant direct and indirect costs of workplace injuries and illnesses. (See page 5.)

### Making a Difference

An old friend of mine has often said, “Gee, when you talk about workplace accidents, injuries and fatalities, you sure seem to take it personally!” Well, I do!

Every time MIOSHA responds to such situations or whenever we are studying the statistics, I ask myself, the MIOSHA staff and other stakeholders, “Is there something that we should have been doing differently or should change in the future to help prevent such accidents?” We cannot help improve the conditions for Michigan’s workers unless we continually ask such questions and make changes to deal with them.

We all have responsibility to help protect the working men and women of Michigan. It is only by working together that we can “Make a Difference” to help prevent workplace injuries, illnesses and fatalities.

*Douglas J. Kalinowski*

# Congratulations Herman Miller!

## Herman Miller's Midwest Distribution Center Receives State's Highest Safety and Health Award

On June 20th, Herman Miller's Midwest Distribution Center received the Michigan Voluntary Protection Program (MVPP) Star Award from the MIOSHA program for workplace safety and health excellence.

This is the third Herman Miller facility in Michigan to achieve Star status. The GreenHouse Seating Operation received the award in 2005, and the Spring Lake 171st Avenue facility received the award in 2006. The Midwest Distribution Center was named a Rising Star company on May 17, 2005.

### Changing Workplace Landscapes

"Herman Miller is one of Michigan's 'Best Corporate Citizens' and we are honored to recognize them for their workplace safety and health excellence," said DLEG Director **Keith W. Cooley**. "Their outstanding ethic of innovation and design has made them an international leader in furniture manufacturing—they have changed the interior landscape of workplaces worldwide."

MIOSHA Director **Doug Kalinowski** presented the MVPP Star Award to **Kevin Tibbetts**, General Manager of Logistics for Herman Miller, Inc., who accepted on behalf of all employees. State and local elected officials, corporate leaders and MIOSHA representatives were on hand to congratulate employees and management on their outstanding achievement.

"We are honored to be the third Herman Miller facility to receive the prestigious Star Award," said Tibbetts. "Every Midwest Distribution team member is focused on creating a safe and healthy work environment and every team member is to be congratulated for this outstanding achievement."



*Midwest Distribution Team Leaders (front row) were joined by state and local dignitaries to celebrate their safety and health achievement.*

### Creating Safety & Health Excellence

This is the most prestigious safety and health award given in Michigan. MIOSHA established the MVPP program in 1996 to recognize employers actively working toward achieving excellence in workplace safety and health. Since 1999, Michigan has recognized 20 MVPP Star companies.

The incidence rates at the Midwest Distribution Center are well below the industry average for their NAICS code 49311—General Warehousing and Storage. Their total case incidence rate (TCIR) was 3.8 in 2003, 2.8 in 2004, and 2.5 in 2005—compared to the Bureau of Labor Statistics (BLS) industry average of 10.1 in 2003, 9.3 in 2004, and 8.4 in 2005. The total day's away/restricted cases (DART) rate was 2.9 in 2003, 1.4 in 2004, and 1.3 in 2005—compared to the BLS industry average of 7.5 in 2003, and 5.6 in 2004 and 2005.

"National VPP sites experience 60 to 80 percent less lost work day injuries than would be expected of an average site in their industry," said Kalinowski. "Not only does the MVPP program significantly reduce injuries and illnesses—it also has a tremendous impact on the bottom line."

The Midwest Distribution Center employs about 275 workers, and is the company's main warehousing and distribution center for office furniture. The MIOSHA review team consisted of **Doug Kimmel**, CET MVPP Specialist & Team Leader; **Cindy Zastrow, M.S.**, CET Industrial Hygienist; and **Kristin Osterkamp, CSP/CIH**, CET Industrial Hygienist. The team conducted 36 formal and 12 informal interviews during the site visit. The team examined each of the required elements of their safety and health management system, and found them to effectively address the scope and complexity of the hazards at the site.



*The Midwest Distribution Center's day shift employees participated in the MVPP celebration, and all shifts were served a buffet lunch.*

### Becoming an Industry Leader

Herman Miller's corporate mission is to create great places to work. A key element of their mission is to create a safe, healthy and productive work environment for their own employees. Midwest Distribution employees participate in the facility's safety and health efforts through teams, committee membership, a suggestion program and physical inspections.

Areas of excellence include:

- Stellar housekeeping;
- Vehicle safety and pedestrian walkways;
- Alarmed gates at loading docks; and
- Ergonomic checklists that provide valuable information for ergonomic improvements.

Herman Miller helps create great places to work, heal, learn, and live by researching, designing, manufacturing, and distributing innovative interior solutions that support companies, organizations, and individuals all over the world. The company's award-winning products, complemented by furniture management and strategic consulting services, generated over \$1.73 billion in revenue during fiscal 2006.

Herman Miller is widely recognized both for its innovative products and business practices, having been named recipient of the prestigious National Design Award for product design from the Smithsonian Institution's Cooper-Hewitt, National Design Museum.

In 2007, the company was again included in CRO magazine's "100 Best Corporate Citizens" and was cited by Fortune magazine as the "Most Admired" company in its industry. The company trades on the NASDAQ market under the symbol MLHR." For additional information visit [www.HermanMiller.com](http://www.HermanMiller.com).

# Maco Concrete Sentencing

Company Pleads No Contest to Felony Charge of a MIOSHA Violation Causing Death and Pays \$10,000 Fine

On April 19, 2007, in Oakland County Circuit Court, Maco Concrete Inc., of St. Clair Shores, pled no contest to the felony charge of a MIOSHA violation causing death, for the workplace fatality of **Jeffrey Padot**. On May 31st, the company was sentenced to pay the maximum fine of \$10,000, which was given to the victim's young surviving son.

"Maco Concrete employee Jeffrey Padot worked unprotected in an eight-foot trench that collapsed and killed him," said DLEG Director **Keith W. Cooley**. "Employers will be held accountable for their actions. If Maco Concrete had provided adequate safeguards and fulfilled their obligation to provide a safe work environment for their employees, this tragedy could have been prevented."

## Fatal Trench Cave-in

The Michigan Occupational Safety and Health Administration (MIOSHA) investigated the cave-in and found that Maco Concrete violated the most basic provisions of the MIOSHA trenching standard.

On April 23, 2006, Maco Concrete was digging an excavation of a new sewer line in Addison Township. Padot and another employee were laying sewer pipe in an unprotected excavation approximately eight feet deep, with sides that were nearly vertical.

The MIOSHA investigation revealed that the company had at least three non-fatal trench cave-in incidents within two months prior to the fatal cave-in that took place on April 23rd.

To ensure worker safety at excavations more than five feet deep, walls must be sloped or shored, or trench shields or boxes must be used, to prevent serious injuries or fatalities.

Trench sloping and support systems are required by the MIOSHA Construction Safety Standard, Part 9, Excavation, Trenching, and Shoring. This standard covers the digging of excavations and trenches that an employee is required to enter, and the supporting systems used on construction operations. Part 9 also requires a trained and experienced "qualified person" to evaluate excavation hazards.

## Criminal Prosecution

On Dec. 18, 2006, MIOSHA cited Maco Concrete, Inc., with \$103,600 in proposed penalties for allegedly failing to adequately protect employees from trenching and excavation hazards.

The company received a combined total of three alleged willful violations with a proposed penalty of \$99,400; and two alleged serious violations with a proposed penalty of \$4,200.

Based on provisions in the MIOSH Act, Public Act 154, as amended, every willful violation, which is connected to a fatality, is referred to the Michigan Attorney General's Office for criminal investigation and/or prosecution. On Dec. 19, 2006, criminal charges were filed against Maco Concrete, Inc., by the Attorney General's Office.

"Employers have a responsibility to ensure the physical safety of their workers. When an employer fails to follow the law and our state's safety regulations, there must be consequences," said Michigan Attorney General **Mike Cox**.

## MIOSHA Awareness Campaign

Because of the recognized higher hazards in excavation and trenching, these work operations are a focus in the MIOSHA five-year strategic plan. MIOSHA is coordinating an awareness campaign to remind employers that employee training is required – and to provide training opportunities through the Consultation Education and Training (CET) Division.

Companies can contact the CET Division at 517.322.1809 for construction consultation, education and training services. For more information on MIOSHA standards and excavation and trenching hazards, companies can contact the Construction Safety and Health (CSH) Division at 517.322.1856. ■



*Emergency rescue workers responded to the Maco Concrete trench collapse where worker Jeffrey Padot was fatally injured in a cave-in.*



## Teen Workers Campaign

Young workers experience higher rates of work-related injuries than other workers. The National Institute for Occupational Safety and Health (NIOSH) estimates that at least 100,000 young workers nationwide seek treatment in an emergency room for a work-related injury every year. Annually, at least 70 young people are killed nationwide on the job, which is double the fatality rate of adult workers.

The 2007 MIOSHA "Extreme Safety" campaign focuses on three high-hazard industries where young workers often find employment – the construction, food service and lawn care industries. Fact sheets for each of these industries have been developed.

### Construction

The construction fact sheet identifies restricted activities and those typically performed by teens. Primary hazards including working from heights, electrical shock, working around moving or rotating equipment, chemical and thermal burns, lifting and temperature extremes are outlined and solutions provided.

### Food Service

The food service fact sheet outlines typical work activities and age restrictions for certain jobs. Eleven categories of primary hazards including lifting and carrying heavy objects, slippery floors, use of sharp knives and equipment, deep fat fryers, electrical shock, cleaning chemicals, workplace violence and noisy environments are identified. Recommendation for avoiding injury and staying safe are provided.

### Lawn Care industries

The lawn care industries fact sheet also provides typical activities performed by young workers, the primary hazards associated with work activity, and solutions for avoiding hazards. The fact sheet provides solutions to typical hazards including cuts, heat stress, lighting, eye injuries, use of chemicals and pesticides, insect bites and noisy environments.

On June 1, 2007, a special mailing was sent to high schools throughout the state encouraging their support by providing the fact sheets and the special MIOSHA "Extreme Safety: Important Facts for Working Teens" brochure to students interested in seeking work.

The fact sheets and the "Extreme Safety" brochure are posted on the MIOSHA website at [www.michigan.gov/miosha](http://www.michigan.gov/miosha). In addition, the website includes a 31-slide PowerPoint program, "Extreme Safety," providing basic safety and health information. ■

# Safety and Health Systems Pay

## SKD Jonesville Estimates a \$15 to \$1 Return on Safety Investment!

By: *Quenten Yoder, Safety Consultant  
Consultation Education and Training Division*

In March 2007, I had the good fortune to visit a company that serves as an excellent example of management commitment to worker safety and health.

The SKD Automotive Group Jonesville facility produces automotive stampings and sub-assemblies. SKD Automotive Group is headquartered in Troy, and is a tier one supplier of metal stampings, components and weldments to the automotive industry in North America.

I was invited, along with CET Division Supervisor **Bill Lykes**, to join in celebrating a remarkable milestone in the history of the SKD Jonesville plant. The plant had achieved working a total of 3,138,000 hours without incurring any lost time accidents. **This amounts to 1,320 days without a lost time accident!**

### Successful Systems Approach

In the Winter 2007 MIOSHA News, I published an article, "Problem Solving: A Systems Approach." The article discussed the need to develop a comprehensive safety and health system that complements, rather than conflicts, with the other systems designed to enhance quality and production. What we witnessed during our visit to SKD Jonesville was the result of successful systems integration.

How did this plant employing 360 people accomplish this feat? It was through strong, ongoing safety and health efforts that started with firm management commitment.

If you have been a regular reader of the MIOSHA News, you are most likely familiar with the five elements of a successful safety and health system: management commitment, employee involvement, worksite analysis, hazard prevention and control, and safety and health training. All of these elements are vital to an effective system.

However, if you have management commitment, all the other elements will fall into place. There is no doubt that this is the case at SKD.

### Safety & Health Systems Pay

There were a number of speakers at the ceremony including **Jim Barry**, President of National Materials LP, an affiliated company that sponsors an annual safety award that Jonesville has previously received, and **Jeff Daniel**, Vice President of Operations for SKD. Interestingly, a number of representatives were there repre-

sented SKD's customers. Barry addressed the importance of their safety system and stated it was not to be compromised by production or quality concerns. "It just makes good business sense," he stated.

The celebration included a steak dinner for all employees, and prize drawings, including a complete home computer system. The total cost of the event was approximately \$20,000. When I asked about this cost, I was informed by **Ross Pechta**, Human Resources Manager, and **Tom Schneider**, Safety and Workers Compensation Manager, that they estimate that the cost of the celebration, as well as the cost of maintaining their safety system, **returns about fifteen dollars for every dollar spent!** And this is just for those costs related to workers' compensation.

**Steve Orey**, Plant Manager for SKD Jonesville, echoed this thought. His commitment is evident in their pre-shift managerial meetings.

corrective actions and posts the corrective actions, complete with pictures when appropriate, for general employee review. The committee also conducts regular workplace audits designed to uncover rule violations and other potential hazards. Consequently, this group is heavily involved in worksite analysis activities.

Recommendations on the selection and use of personal protective equipment (PPE) are another role of the committee. PPE for all employees and visitors consists of a hard hat, steel-toed shoes, safety glasses, hearing protection and arm guards. Even though a visitor would not ordinarily come into contact with the sharp edge of a part, arm guards are required. This PPE was required of guests at the celebration as they walked through the plant, because it would set a bad example to make an exception.

Training is another strong point of their safety system. Pechta and Schneider stated that over the past year they have conducted safety programs in 34 distinct areas. Each year the Human Resources department creates a spreadsheet with dates and subjects of the proposed training. This serves as a training record and plan. SKD also has an extensive new employee orientation program that goes beyond training required by MIOSHA standards.

### Integration Equals Success

My previous MIOSHA News article stated, "If all systems are functioning optimally accidents and illnesses will not occur." Further, "...all systems are interrelated." And, finally "...if systems conflict, all impacted systems will be compromised."

From my experience with SKD Jonesville, it is obvious that significant efforts are made to resolve problems and integration in areas of machine guarding, machine installation and MIOSHA rule interpretation. This does not mean that difficulties do not arise.

In order to be relevant, systems must evolve and be perfected. It is a never-ending task. SKD has not been free of MIOSHA citations. They have not been free of recordable injuries. Nor, have they been free of restricted workdays and job transfer cases.

But, it is apparent that they have a proactive approach to dealing with system inconsistencies and failures. Their efforts are an excellent example of management commitment, and the success of their safety and health system is definitely enhancing their bottom line. ■



*In March, SKD Automotive Group's Jonesville facility celebrated more than 3,000,000 work hours without a lost time accident.*

In these meetings, safety problems are discussed before dealing with quality and production issues. This interfacing of safety, quality and production ensures system compatibility.

### Systems Approach Strong Points

Employees at SKD are involved in their safety effort in a number of different ways. The most obvious is through participation in the safety committee. This committee meets monthly and is comprised of 21 staff, including the Plant Manager, the Operations Manager, the Human Resources Manager, the Safety and Workers' Compensation Manager, and supervisor and hourly personnel representatives.

The safety committee reviews occurrences and near misses, discusses and implements cor-

# Residential Construction

## WOOD TRUSS BRACING

*By: Richard Kawucha, Senior Safety Officer  
Jeremy Hidalgo, Safety Officer  
Construction Safety and Health Division*

Residential construction is an area of the construction industry that is receiving an increased emphasis from the MIOSHA Program.

The construction industry is one of the most hazardous industries in Michigan. Only about four percent of Michigan’s workforce is employed in construction—however, construction fatalities account for nearly 50 percent of all fatal workplace accidents.

Many residential contractors are small operators. These contractors do not have the resources to hire staff with health and safety expertise, and frequently have little expertise in health and safety themselves. However, when we review MIOSHA accident and fatality investigation activity, it becomes clear there are hazards that need to be addressed.



*Bad Example: These “spacers” are too short and have only one nail at each end. “Spacers” should never be used for temporary bracing.*



*Taking unacceptable shortcuts when installing wood truss bracing is a recipe for disaster.*

In an effort to show a greater presence in this area, the MIOSHA Construction Safety and Health Division (CSHD) is focusing more resources toward inspections in residential construction. This emphasis includes single-family dwellings and multiple family units.

### Modern Wood Trusses

Metal plate connected wooden trusses have been a tremendous boon to the housing industry.

Previously, a team of carpenters would take days to layout, cut, and assemble long lengths of 2x8s and 2x10s to form the framework supporting roofs and floors. Now, the modern trusses are pre-fabricated off-site, under controlled conditions, and creating closer tolerances.

From a builders’ standpoint modern wood trusses have five distinct advantages:

1. Engineered trusses are extremely strong.
2. Constructed from short lengths of 2x4 lumber, there is a tremendous cost savings. (A side benefit being better use of natural resources.)
3. With Computer Aided Drawing (CAD) facilities, custom-built shapes such as cathedral ceilings are becoming commonplace and less costly.
4. Trusses can span large distances with all the weight transmitted to the exterior walls. This makes the non-load bearing interior walls more flexible and easily moved.
5. Metal plate connected wooden trusses are also quickly installed.

For all their strengths, metal plate connected wooden trusses also have some distinct disadvantages. Maximum strength and stability is only obtained when all the components of the structure being built have been properly installed (e.g. sheathing, permanent bracing).

Taking shortcuts in these areas is a recipe for disaster. Unacceptable shortcuts include:

1. Inadequate temporary bracing (1x4s instead of 2x4s, only between two trusses, short pieces of 2x4s for top chords, not enough exterior ground bracing, only one nail per truss instead of two, lack of both diagonal and lateral bracing).
2. Overloading the trusses or point-loading the trusses.
3. Installation of damaged/improperly repaired trusses.
4. Unauthorized changes to the trusses.

5. Inadequate connections to truss support structures (no nails, nails too small, not toenailed).

Until the final nail is driven in place, the modern truss assembly must depend on “bracing” (temporary/permanent) being properly installed. [MIOSHA Investigation Case Studies](#)

Below are two recent MIOSHA investigations of accidents where employees have been seriously injured or died, which illustrate the hazards in wood truss bracing.

**Case Study #1:** Three carpenters were aligning 35 metal plate connected wood trusses they had just finished setting. A fourth carpenter was on the ground cutting bracing lumber for them. The building’s four exterior walls were not braced nor were there any interior walls that might have braced them. No diagonal bracing was installed, some lateral bracing was in place and only 27-inch long “spacers” were used (all bracing consisted of 1x4s with one nail on each end).

All the trusses collapsed sending three employees to the hospital with back injuries, contusions, and broken bones. The employer was cited for lack of training for the employees in truss installation procedures, inadequately bracing the truss support walls, and not following the truss design engineer and Wood Truss Council requirements for truss installation (included with the truss shipment).

**Case Study #2:** Three carpenters were aligning metal plate wood trusses on the walls of a building. There was insufficient bracing on the truss support walls, and inadequate lateral and diagonal bracing (internal/external) on the trusses. When the trusses collapsed, one carpenter was killed and a second received lacerations and bruises.

The employer was cited for lack of training for the employees in truss installation procedures, not recognizing the hazards associated with inadequately braced truss support walls, and not following the truss design engineer and Wood Truss Council requirements for truss installation (included with the truss shipment).

In most truss collapses there is usually one of two reasons for the accident:

1. The trusses did not have adequate erection (temporary) bracing installed (lateral and/or diagonal).
2. The structure supporting the trusses, is either structurally unable to carry the loads, or itself is not braced adequately.

### Proper Wood Truss Bracing

Trusses can only do the job for which they

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# Workplace Heat Hazards

## CASE STUDY: RESTAURANT INDUSTRY

By: Lynn Totsky, Industrial Hygienist  
General Industry Safety & Health Division

Hot environments in a wide range of industries present serious hazards to employee safety and health. **Heat stress**, the combination of heat, humidity and physical labor, can lead to serious illness and even death.

Long exposure to extreme heat or too much activity under a hot sun causes excessive perspiration, which can lead to **heat exhaustion**. Symptoms include headache and a feeling of weakness and dizziness accompanied by nausea and vomiting, there may also be cramps.

In heat exhaustion there is excessive perspiration. By contrast, in **heat stroke**, there is an absence of perspiration; an extremely high body temperature; hot, dry skin; confusion; and loss of consciousness and/or convulsions. An extremely high body temperature can cause death.

Treatment for heat exhaustion includes:

- Move the person to a cool environment (i.e. a well-ventilated or shaded area).
- Remove or loosen their clothing.
- Increase the consumption of fluids. (Do not force an unconscious person to drink.)

For heat stroke or if the person is unconscious:

- Reduce the body's temperature as rapidly as possible via a cool water or sponge bath; fan the body surface.

- Contact a physician immediately.

### Case Study: Restaurant Industry

In July of 2006, MIOSHA received an employee complaint regarding heat stress in a restaurant. The complaint alleged that employees were working in 95-degree temperatures, they felt dehydrated, the temperature may have affected an employee's breathing, an employee was sent to the emergency room for heat exhaustion, and the conditions were unworkable.

#### Investigation Background

While there are no MIOSHA regulations requiring temperatures to be kept under a certain degree, Section 11(a) of Act 154 (the General Duty Clause) requires the employer to furnish to each employee, employment and a place of employment which is free from recognized hazards that are causing, or are likely to cause, death or serious physical harm to the employee.

Work operations involving high air temperatures, radiant heat sources, high humidity, and strenuous physical work activities have a high potential for inducing heat stress in employees

engaged in such operations. The work operations identified in this investigation involved employees cooking at a grill in the kitchen, chefs cooking in the kitchen of a restaurant. Employees had developed and experienced heat-induced disorders such as heat exhaustion, fainting and heat fatigue, for approximately two weeks prior to the investigation.

#### Investigation Measurements

During the investigation wet bulb globe temperature (WBGT) measurements were obtained. WBGT offers a useful, first-order index of the environmental contribution to heat stress; it is influenced by air temperature, radiant heat and humidity, but does not account for all the interactions between an employee and the environment.

During the investigation the WBGT measurements indicated employees were exposed to readings ranging from 77.9 to 96.3 °F on July 28, 2006, and from 82.4 to 93.2 °F on August 2, 2006. It was noted there were outdoor record high temperature of 96 °F on July 31, 2006, and 97 °F on August 1, 2006.

#### Heat Stress Violations

The investigation of employee exposure to heat stress in this workplace resulted in a citation of the General Duty Clause being issued, based on known industry standards.

The American Conference of Governmental Industrial Hygienists (ACGIH®) provides general controls to deal with heat stress from air temperature, as well as the interactions between employees and the environment. The interactions below were investigated during the inspection.

**Heat Reduction** – During the investigation it was noted that employees were exposed to radiant heat during the cooking process and were exposed to steam while dishwashing. The employer had not provided shielding, the ventilation above the dishwasher designed for removal of steam was not functioning, and cooling garments and portable air chillers were not utilized.

An employer should shield employees from radiant heat sources, and reduce process heat and water-vapor release. Cooling garments (vests, bandanas) can be worn to reduce the heat exposure to employees and portable air chillers can be used.

**Ventilation** – During the investigation it was noted that air conditioning was provided in the

dining room and office areas, but there was no air conditioning supplied to the kitchen area for cooking and dishwashing. It was also noted that the air conditioning in the dining room was not functioning at the time of the inspection. Circulating fans were used in the kitchen areas; however, it was not effective since air that exceeds 95 °F can increase the heat load on the body.

An employer should provide general air movement through use of supply and exhaust ventilation.

**Administrative Controls** – During the in-



*The automatic dishwashers, ovens, fryers, and burners in this kitchen all contribute to the heat hazards faced by the workers.*

vestigation it was noted that breaks were not taken by employees according to the ACGIH® recommendations for frequency found in Table 2 of the Heat Stress section of the Threshold Limit Values (TLV) booklet. Employees were not allowed sufficient recovery time for heat exposure. Breaks that were taken by dishwashers and dining room chefs were taken outdoors in a hot environment, not in a cool area.

An employer should set acceptable exposure times to heat, should allow sufficient recovery for employees exposed to heat, and should limit physiological strain by reducing heavy activity. As metabolic rate increases from work demand, an employee's exposure to heat stress can result in an excessive heart rate and elevated body core temperature by not allowing for proper recovery from heat exposure for the body.

**Training** – During the investigation it was noted that employees were not trained on the signs of symptoms of heat stress and were not permitted to practice self limitation to exposure.

Employers should train employees and su-

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# Michigan Rubber Products

## Exemplary Company Receives State's Highest Ergonomic Award

Michigan Rubber Products of Cadillac received the Ergonomic Success Award from MIOSHA on April 20th.

**This is the first Ergonomic Success Award issued to an employer since April 2005.**

The ergonomic improvements at the facility have significantly reduced the number of repetitive motion injuries for its employees – from seven in 2004 to one in 2005.

### Ergonomic & Economic Success

DLEG Director **Keith W. Cooley** and MIOSHA Director **Doug Kalinowski** presented the award to General Manager **Dennis Roberts** and a group of **production team members**, who accepted on behalf of all employees. **Rep. Darwin Booher** (District 102) and other state and local officials congratulated Michigan Rubber on the success of their ergonomic improvements.

“Michigan Rubber Products is at the forefront of the rubber and plastics industries. It is an honor to recognize both their ergonomic achievements and their economic success,” said Cooley. “They are helping lead Michigan’s economic recovery by their outstanding commitment to product improvement through research, technology and innovation.”

MIOSHA’s Consultation Education & Training (CET) Division issues the Ergonomic Success Award to employers for instituting ergonomic improvements and substantially reducing traumatic strain and sprain injuries and cumulative trauma disorder illnesses.

The criteria for the award are stringent and include the following:

- An incidence rate below the rate for their NAICS Code,
- At least a 25 percent reduction of injuries,
- Improvement achieved through engineering controls, and
- Employee input.

“I’m extremely proud of our team here at Michigan Rubber Products,” said Roberts. “We work very hard at our safety program and it paid off by being the first company since April 2005, to receive this prestigious award from the state of Michigan.”

### Safety & Sustainability Recognition

The North American Industry Classification System (NAICS) code for Michigan Rubber is 326299 – All Other Rubber Product Manufacturing. The company has lowered their total case incident rate (TCIR) from

10.65 in 2004, to 4.7 in 2005, which is below the industry average of 10.3 for 2005. The company is also ISO 14001 registered for operating in an environmentally sustainable manner and ISO/TS 16949 registered for automotive specific quality standards.

Michigan Rubber has made extensive ergonomic improvements throughout their facilities, which has significantly reduced musculoskeletal injuries. Ergonomic improvements help employees work safely without needing to over-lift, over-reach, sit or stand too long, or use awkward postures. They received the MIOSHA Ergonomic Innovation Award on October 17, 2005. CET Safety Consultant **Tony Neroni** has provided consultation and training services to the company.

Michigan Rubber’s ergonomic changes include:

- Electric presses – Slide rails were installed to move the parts and an automated punch out plate is used to remove the parts. The new process eliminates lifting and reduces pushing, pulling and twisting.
- Compression presses – The mold moves automatically, rather than by chain hoists, swinging plates, crow bars, and safety bars; eliminating lifting, pulling, pushing, and improving body position.
- Extrusion department – Adjustable work stations were installed. These stations can be adjusted to individual operators and improves body posture and reduces repetition and static holding and gripping.
- Splice mold area – The part was mounted on a movable frame to eliminate pushing, pulling and bending over.

- Autoclave track area – The track was re-designed to eliminate lifting into the autoclave.

- Injection presses – A robot was installed in the injection plant, eliminating the need for the operator to manually lift the parts.

- Verification machines – This new machine automatically inserts sensors into the parts, eliminating twisting and turning.

“Work-related musculoskeletal disorders account for nearly 60 percent of workers’ compensation cases each year in Michigan,” said Kalinowski. “Companies like Michigan Rubber that effectively address ergonomic hazards in the workplace reap the economic benefits of increased quality and productivity – while they protect their workers.”

### Cutting Edge Products

For more than 30 years, Michigan Rubber Products ([www.michigan-rubber.com](http://www.michigan-rubber.com)) has provided components, systems, and solutions of the highest quality to the automotive, heavy truck, recreation, appliance and industrial markets utilizing cutting edge technologies and a thorough integration of industrial disciplines.

With 390 employees, Michigan Rubber manufactures engineered rubber products for the automotive industry in four categories: engine air induction hoses and assemblies, noise vibration dampers, tubing components, and static seals and gaskets. They manufacture more than 400 products utilizing rubber extrusion and injection, compression, and transfer molding.

Michigan Rubber provides customers with full service capabilities from engineering and CAD systems, solid modeling design of new components, to a fully equipped laboratory for research, development, and new material composition. With the facilities and equipment to handle the most demanding production schedules, they have the capabilities to exceed all customer requirements for quality, cost, and on-time delivery.

Michigan Rubber is part of Myers Industries, Inc., an international manufacturer of polymer products for industrial, agricultural, automotive, commercial, and consumer markets. The company is also the largest wholesale distributor of tools, equipment, and supplies for the tire, wheel and undervehicle service industry in the United States. Myers Industries, [www.myersindustries.com](http://www.myersindustries.com), had record net sales of \$780 million in 2006. ■



*A group of Michigan Rubber Products production team members accepted the Ergonomic Success Award on behalf of all employees.*

# Exposure to Isocyanates

## CASE STUDY: SPRAY PAINTING

By: Tommy Kesterson, Industrial Hygienist  
General Industry Safety and Health Division

Isocyanates are compounds containing the Isocyanate group (-NCO). They react with compounds containing alcohol (hydroxyl) groups to produce polyurethane polymers, which are components of polyurethane foams, thermoplastic elastomers, spandex fibers, and polyurethane paints. Isocyanates are the raw materials that make up all polyurethane products.

Jobs that may involve exposure to isocyanates include painting, foam-blowing, and spray coating. Employee exposures to isocyanates may occur during the thermal degradation of polyurethane products and also during manufacturing of many polyurethane products such as, polyurethane foam, insulation materials, surface coatings, car seats, furniture, foam mattresses, under-carpet padding, packaging materials, shoes, laminated fabrics, polyurethane rubber, and adhesives.

### Health Effects of Isocyanates

Isocyanates can cause asthma. Symptoms can occur soon after exposure or several hours later. Isocyanates can also cause hypersensitivity pneumonitis, a lung disease whose symptoms include fever, body aches, shortness of breath, and cough with phlegm or sputum. Exposure to isocyanates may also cause irritation of skin and mucous membranes, chest tightness, and difficulty breathing.

Isocyanates are "sensitizers." About one out of 20 people who work with isocyanates becomes "sensitized" to them. Being "sensitized" to isocyanates means that you may have an asthma attack any time you are exposed to them, even to extremely small amounts. Sensitivity to isocyanates can be permanent.

### The Painting Operation

This case deals with a spray-on polyurethane coating. Spray-on polyurethane coatings have many product applications due to their high tensile strength, abrasion resistance, chemical and corrosion resistance and waterproof nature.

The operation involved spray painting large parts used on machines designed for the food packaging industry. The paint in question was chosen for its chemical and corrosive resistance and waterproofing qualities. It contained 1-5% Methylene Bisphenyl Isocyanate (MDI) and 45-70% MDI based Polyisocyanate. All spraying operations were conducted inside an enclosed and ventilated spray booth.

Due to the large size of parts being sprayed, the company added an additional eight feet to the spray booth. The spray painter transferred the

paint directly into the small pot that was part of the spray gun. At the time of the investigation, the employee's worktable was located at the far end of the spray booth away from the exhaust ventilation. The employee would spray small parts on fixed/stationary racks while the large parts (some weighing several tons) were maneuvered through the doors at the end of the spray booth.

Employees were required to wear a half-face or a full-face respirator with cartridges and pre-filters. There was a written respiratory protection program, but it was not specific to the operations at the site and did not establish respirator cartridge change schedules. Employees interviewed indicated that they would change cartridges when breathing resistance increased significantly or after prolonged periods of use.

This is not appropriate, since isocyanates have poor warning properties and exposures can occur if the cartridges are not changed in accordance with an established change schedule. Other personal protective equipment included latex gloves, tyvek suits and hoods, a face shield or goggle if half-face respirators were used, and duct tape to seal all opening around the gloves and boots.

### The MIOSHA Investigation

Air monitoring for MDI was conducted by MIOSHA for the master painter at the facility. This employee was responsible for applying the Isocyanate containing paint onto the various parts. The Ceiling Limit of MDI is 0.2 mg/m<sup>3</sup>. The results of the initial sampling were as follows:

**Sample #1** (while performing paint transfer and set up operations) 0.16 mg/m<sup>3</sup>.

**Sample #2** (while performing paint spray-operations) 0.25 mg/m<sup>3</sup>.

**Sample #3** (while performing paint spray-operation) 0.30 mg/m<sup>3</sup>.

Based on the air monitoring results and investigation findings, citations were issued for the following violations:

- Exposing an employee to a concentration of MDI in excess of the Final Rule Limit of 0.2 mg/m<sup>3</sup> which is listed in Table G-1-A under Ceiling column of the Air Contaminant Standard, Part 301, Rule 3(a)(iii) and not implementing feasible engineering, administrative and work practice



*This ventilated spray booth is used for painting operations, and has been recently extended in order to handle larger parts.*

controls to reduce the employee's exposure.

- Not developing and implementing a written respiratory protection program where respirators were necessary to protect the health of employees (spray booth operators) per Respiratory Protection Standard, Part #451, 1910.134(c)(1).

- Not ensuring that spray booth operators using a tight-fitting face piece respirator passed an appropriate qualitative or quantitative fit test as stated in paragraph (f) of the Respiratory Protection Standard, Part #451, 1910.134(f)(1).

- Not ensuring that employees received annual training in accordance with (k)(5)(I) through (k)(5)(iii) of the Respiratory Protection Standard, Part #451, 1910.134(k)(5).

- Not providing effective information and training to employees on isocyanates in their work area at the time of their initial assignment, as specified in the Hazard Communication Standard, Part #430, 29 CFR 1910.1200(h)(1), (2), and (3).

### Corrective Actions by the Employer

In response to the investigation findings and MIOSHA recommendations, the following corrective actions were instituted by the employer in the spray-painting operations:

- The painter was instructed not to place his body between the exhaust ventilation and the part being sprayed and that he should always be upwind of the point of operation.

- The small parts racks were reconstructed to allow the painter to manipulate the angle and direction of the parts to maintain the spraying operation between his body and the exhaust ventilation.

- The painter was instructed to spray the

*Cont. on Page 19*

# Chemical Facility Anti-terrorism Regulation

*By: Michael T. Mason, Safety & Health Manager  
General Industry Safety and Health Division*

On April 2, 2007, the U.S. Department of Homeland Security (DHS) released an interim final regulation that imposes for the first time a comprehensive federal security regulation for high risk chemical facilities.

The regulation requires owners or operators of chemical facilities housing certain quantities of specified chemicals to complete a preliminary screening assessment that determines the level of risk associated with the facility.

## Chemical Security Assessment

A chemical facility is any establishment that manufactures, uses, stores, or distributes a chemical listed in "Appendix A: Chemicals of Interest" at or above the Screening Threshold Quantity. The new regulation does not apply to maritime vessels and port facilities, water treatment plants, wastewater treatment plants, any facility owned/operated by the U.S. Department of Defense or the U.S. Department of Energy, and any facility subject to Nuclear Regulatory Commission regulations.

All chemical facilities are required to complete and submit a Top Screen using DHS's Chemical Security Assessment Tool. If the DHS determines that a chemical facility qualifies as high risk, its owners or operators will be required to prepare and submit both a security vulnerability assessment and a site security plan.

A security vulnerability assessment is the process of determining the likelihood of an adversary successfully exploiting a vulnerability, and the resulting degree of damage or impact. A site security plan is a document that describes an owner's or operator's

plan to address security issues and related events, including security assessment and mitigation options.

DHS requires all facilities to electronically submit all required documentation through its online, web-based system. In addition, the DHS requires that only an officer of the corporation can submit information to the DHS, and the corporate officer must live in the United States of America.

## Order of Compliance

The new regulation preempts all state and local chemical facility anti-terrorism laws.

DHS can issue an Order of Compliance for any instance of noncompliance, such as a chemical facility's refusal to complete and submit the required Top Screen, failure to allow the DHS to conduct an inspection, or failure to update a site security plan.

For repeated patterns of noncompliance or for egregious instances of noncompliance, the DHS has the authority to seek compliance through the imposition of civil penalties of up to \$25,000 per day during which the violation continues. DHS can also order non-compliant chemical facilities to cease operations.

The DHS has established a category of information, called "Chemical-terrorism Security Vulnerability Information," that will protect certain chemical security information from inappropriate public disclosure. The Chemical-terrorism Security Vulnerability Information will include security vulnerability assessments, site security plans, and other sensitive information and documentation related to the development of security strategies.

## DHS & OSHA Regulatory Overlap

Because a potential overlap exists between the new DHS security regulation and the regulations enforced by other federal agencies, including OSHA, the DHS indicates that it will work closely with these other federal agencies to ensure that regulated facilities can comply with applicable regulations while minimizing any duplication.

The DHS does not intend for their new regulation to impede the authority of OSHA or other federal agencies. There is no mention in the preamble of the new regulation on how the DHS intends to interact with states who have their own OSHA program.

For more information on the new regulation, go to [www.dhs.gov](http://www.dhs.gov).

# WEB Update

*By: Amber Sweeney, Secretary  
General Industry Safety and Health Division*

To meet the varying demands of Michigan's citizens, safety and health complaints can be submitted online or forms can be printed and mailed to the MIOSHA office.

Every year, MIOSHA receives approximately 3,000 complaints. Of those, roughly 35 percent are received online. According to the MIOSHA Field Operations Manual, complaints filed online are most likely to be handled via telephone call or letter to the employer, not an actual onsite investigation. Even though there are no citations issued in these cases, the employer is still required to correct any violations of MIOSHA regulations.

Written complaints received and signed by a current employee have the most likelihood of resulting in an onsite investigation. MIOSHA may also use discretion to authorize onsite investigations for complaints reporting:

- Imminent danger situations;
- Injuries resulting in permanent disabilities or illnesses that are chronic or irreversible;
- Alleged hazards covered by an emphasis program; or
- A company that has a history of instance-by-instance, willful, or failure-to-abate citations.

For construction operations, complaints are also received via telephone, due to the rapid pace of jobsite change in the construction industry.

When filing a safety and health complaint, regardless if it is filed online or written, the identity of a complainant will be kept confidential unless the complainant wishes to make their identity part of the public record.

To file a complaint online or to print a copy of the MIOSHA complaint forms, please visit our website at [www.michigan.gov/mioshacomplaint](http://www.michigan.gov/mioshacomplaint). Employee Discrimination complaint forms may be printed from the website as well.



## Metalworking Industries of Michigan W.C. Fund Alliance

MIOSHA and the Metalworking Industries of Michigan Workers' Compensation Fund (MIM W.C. Fund) signed a formal alliance on May 3rd to protect the safety and health of Michigan's metalworking industry workers.

**Mark Sledzinski**, Fund Administrator, MIM W.C. Fund; and **Doug Kalinowski**, Director, MIOSHA Program; signed the alliance. Also participating in the signing were the **Fund Board of Trustees**, which is composed of active MIM W.C. Fund members.

"Keeping Michigan metalworking industry workers safe and healthy on the job is the focus of this alliance," said Kalinowski. "This proactive partnership between labor, industry and government, can save lives by ensuring that worker safety and health plays an integral role in Fund member's workplaces."

"The members and trustees of the Metalworking Industries of Michigan Workers' Compensation Fund remain fully committed to the principles of workplace safety and this alliance supports that philosophy," said Sledzinski. "The MIM W.C. Fund has been an industry leader in maintaining a focus on education and training."

The goals of this alliance include:

- Promoting and improving shop safety by providing safety awareness and other outreach

activities across the state;

- Providing training and education activities and encouraging member participation;

- Sponsoring CET Division seminars on power press safety, safety and health management systems, and lockout/tagout; and

- Including articles in regular membership mailings on the alliance, the seminars, and other safety issues.

Rising workers' compensation premiums in the late 1970s inspired a group of individuals in the metalworking trades to band together and form the Metalworking Industries of Michigan Self-Funded Workers' Compensation Program (MIM W.C. Fund) as an alternative to purchasing traditional insurance. Since its inception in 1981, the group has grown to more than 150 member companies, representing in excess of \$6,000,000 in estimated premiums, with an average experience modification of just 0.81.

The MIM W.C. Fund utilizes specialized underwriting requirements which enable it to enroll only metalworking companies that are ac-



tively managing their loss control and safety programs to reduce claims costs. The Fund feels that a strong safety education and claims management commitment at the corporate level equates to low claims exposure for the entire group. This allows them the opportunity to potentially make larger returns of surplus premiums.

For more information about forming an alliance or partnership with MIOSHA, please check our website at [www.michigan.gov/miosha](http://www.michigan.gov/miosha) or contact the Consultation Education and Training (CET) Division at 517.322.1809. ■

## 77th Annual Michigan Safety Conference

The Michigan Safety Conference (MSC) welcomed nearly 5,000 attendees to their 77<sup>th</sup> annual conference April 17<sup>th</sup> and 18<sup>th</sup> at DeVos Place & Amway Grand Hotel in Grand Rapids. This new exciting location, with a bigger convention center, accommodated more exhibitors and conference amenities.

The theme for this year's conference was, "We teach what we live," and attendees were encouraged to make safety an integral part of their lives. On April 16<sup>th</sup>, AJ Hale, President of the 77<sup>th</sup> Annual MSC and EHS Engineer at Tenneco, presented the MSC annual awards to two outstanding volunteers.

### Safety Professional of the Year

**MaryAnn L. Northcote, CPP, CHSP, CEA**  
Director of Loss Control, Trinity Health  
Insurance and Risk Management Services

Maryann Northcote has served a long and distinguished career in safety. She was employed at St. Joseph Mercy Hospital as Director of Safety and Security from 1978-1989.

Since 2001, she has served as Director of Loss Control for the fourth largest U.S. Catholic healthcare system and has led the workers' compensation, ergonomic, needlestick prevention, and safe patient lifting teams. In addition, she produces and implements template loss control programs for ergonomics, slip and fall prevention, defensive driving, drug testing, smallpox prevention and return to work.

MaryAnn is a member of the national Safety Council, National Fire Protection Association, American Society for Industrial Security and the MSC. She is a local and national speaker, due to her expertise in the field of safety and healthcare.



**Darryl C. Hill, MSC Distinguished Service Award; AJ Hale, President, 77<sup>th</sup> Annual MSC; and MaryAnn L. Northcote, MSC Safety Professional of the Year.**

### Distinguished Service Award

**Darryl C. Hill, CSP**  
Safety & Health Officer  
ABB North America

Darryl Hill has been active in the MSC since 1995. He has served in each officer capacity and was President in 2006. He has served on the MSC Board of Directors since 1998. He has been a member of the Industrial Division for 12 years and served as chair for four years.

Darryl is a member of the Promotion and Publicity Committee and the Scholarship Committee. He introduced the concept of conference sponsors, and developed guidelines for session description levels: basic, intermediate, and advanced.

Darryl is ABB North America Safety & Health Officer and is responsible for over 20,000 employees and contractors. He is a frequent speaker at national, state, and local safety conferences. He serves on the ASSE Executive Committee and was named ASSE National Safety Professional of the Year in 1997.

# CET Awards

MIOSHA recognizes the safety and health achievements of Michigan employers and employees through CET Awards, which are based on excellent safety and health performance.

## Acument Global Technologies – Goodrich

On May 1st, Acument Global Technologies, Inc. – Goodrich Operations received the Bronze Award from the MIOSHA program for an outstanding safety and health record.

“We are proud to recognize Acument Global Technologies Goodrich Operations for its outstanding efforts to create a safe and healthy work environment,” said DLEG Director **Keith W. Cooley**. “They are to be congratulated for creating an environment where all employees accept responsibility for workplace safety and health.”

MIOSHA Director **Doug Kalinowski** presented the award to Goodrich Plant Manager **Greg Dyke**, who accepted on behalf of the plant’s employees. Local officials congratulated the company on its outstanding achievement. Invited guests, management personnel and employees attended the presentation and luncheon.

“Safety, quality, delivery, and profitability – in that order – are the cornerstones of our company, with safety ranking ahead of the others,” Dyke said. “Our employees truly embrace the importance of creating a safe working environment for each other. Their actions have enabled us to dramatically reduce recordable injuries and the risks that lead to them. Today’s recognition would not have been possible without the passionate involvement and participation of employees throughout our facility.”

The Goodrich facility established a safety and health system that uses safety performance indicators (SPI) as the basis for their annual EHS plan. Each Acument facility conducts a formal culture survey each year, and develops an action plan from the results. Each department at Goodrich conducts weekly EHS inspections, and findings and corrective actions are documented.

Acument’s Goodrich plant employs more than 60 workers and produces fine-blanked automotive seating, power train, and suspension components for principally North American automotive OEMs and Tier suppliers.

Headquartered in Troy, Mich., USA, Acument Global Technologies, Inc. is a leading provider of value-based fastening solutions. With about 9,000 employees in 16 countries worldwide, the company supplies fastening products, systems, and services to customers in more than 150 countries.



Employees at Acument Global Technologies – Goodrich Operations celebrated receiving the Bronze Award from the MIOSHA Program.

## The SYGMA Network – Detroit Center

May 31<sup>st</sup>, The SYGMA Network, Inc., Detroit Center, located in Monroe, received the Bronze Award from the MIOSHA program for an outstanding safety and health record.

“We are honored to present this award to the employees and management of The SYGMA Network’s Detroit Center for their dedication to workplace safety and health,” said DLEG Director **Keith W. Cooley**. “This award recognizes their outstanding efforts to protect their workers, while still meeting the challenge facing businesses today of being economically competitive.”

MIOSHA Deputy Director **Martha Yoder** presented the award to **Gary Toth**, Vice President and General Manager; and **Melinda Buell**, Human Resources Manager; who accepted on behalf of all employees.

“SYGMA Detroit has always been a leader in safety and health management within the SYGMA system and prides itself on that fact,” said Toth. “Safety is truly part of the culture here at SYGMA Detroit and all of our associates Walk the Talk every day.”

SYGMA-Detroit’s approach to workplace safety and health has made them a leader in Monroe County. They have fully integrated the **SYGMA-Safe** program into the culture of the SYGMA-Detroit organization.

SYGMA-Detroit has also implemented several ergonomic interventions that have specifically helped to reduce injuries associated with order selectors retrieving product from the storage racks. CET consultants have reviewed the ergonomic solutions and innovations developed by SYGMA employees.

The SYGMA-Detroit Center employs 162 workers, and is a customized chain distribution facility currently serving Michigan, Indiana, Ohio and Pennsylvania. All SYSCO facilities are committed to the highest integrity and ethics in serving their customers, partnering with their suppliers and working with their associates/employees.

The SYGMA Network, Inc. is a wholly-owned subsidiary of SYSCO Corporation, a Fortune 100 company, and one of the largest foodservice distributors in the United States. For the calendar year 2006, the company generated \$33.9 billion in sales. For more information about SYSCO visit [www.sysco.com](http://www.sysco.com).



The SYGMA Network’s Detroit Center employees’ safety achievements were recognized with the MIOSHA Bronze Award.

# Education & Training Calendar

Date	Course Location	MIOSHA Trainer Contact	Phone
<b>August</b>			
22	MIOSHA Recordkeeping and Work-Comp Strategies Auburn Hills	Richard Zdeb Donna Preston	248.391.6081
22	MVPP and MSHARP Application Workshop Plymouth	Doug Kimmel Gloria Coffman	734.354.3302
22 & 23	Continuous Safety Improvement Flint	Linda Long Marlene Nicol	810.600.1440
28	Confined Space Entry Southfield	Karen Odell Jack Mihalko	248.858.8830
<b>September</b>			
11	Mechanical Power Presses: Safety and Health Midland	Linda Long Gordon Burnside	989.837.2332
11 & 12	MIOSHA 10-Hour for Construction Bloomfield Hills	Patrick Sullivan Patricia DuFresne	248.972.1133
13	Supervisors' Role in Safety and Health Auburn Hills	Richard Zdeb Donna Preston	248.391.6081
13	Extreme Safety: Youth Worker Initiative Howell	Karen Odell Janie Willsmore	517.546.3920
19	Health Issues in the Healthcare Industry Holland	Dave Humenick Brian Cole	616.331.7180
25	Supervisors' Role in Safety and Health Escanaba	Barry Simmonds Brent Madalinski	906.789.6902
25 & 26	Two-day Mechanical Power Press Seminar Warren	Jeff Kelley Holger Ekanger	586.498.4100
25 & 26	MIOSHA 10-Hour for Construction Midland	Tom Swindlehurst Gordon Burnside	989.837.2332
27	Industrial Robotic Safety Warren	Jeff Kelley Holger Ekanger	586.498.4100
<b>October</b>			
3	Avoiding Electrocutions in Construction Bloomfield Hills	Patrick Sullivan Patricia DuFresne	248.972.1133
3, 10 & 17	Fundamentals of Safety and Health Grand Rapids	Micshall Patrick Wendy DeShone	616.698.1167
4	Powered Industrial Truck Train-the-Trainer Monroe	Jennifer Clark-Denson Barry Kinsey	734.384.4127
9	Avoiding Electrocutions in Construction Warren	Patrick Sullivan Deb Ross	586.498.4116
11	When MIOSHA Visits and Top 25 Serious Violations Warren	Lee Jay Kueppers Deb Ross	586.498.4116
17	Lockout and Machine Guarding Warren	Richard Zdeb Deb Ross	586.498.4116
23 & 24	MIOSHA 10-Hour Construction Course Warren	Patrick Sullivan Deb Ross	586.498.4116
25	Excavations: The Grave Danger Ann Arbor	Patrick Sullivan Larry Pickel	734.677.5259

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](http://www.michigan.gov/miosha).

**Construction Safety Standards Commission**

**Labor**

- Mr. D. Lynn Coleman
- Mr. Patrick "Shorty" Gleason\*
- Mr. Gregg A. Newsom
- Mr. Larry Redfearn

**Management**

- Mr. Donald V. Staley
- Mr. Peter Strazdas
- Ms. Valerie J. Bradley\*\*

Vacant

**General Public**

Vacant

**General Industry Safety Standards Commission**

**Labor**

- Mr. Dwayne F. Betcher\*
- Mr. William L. Borch
- Mr. Karl E. Heim
- Mr. Jeffrey Radjewski

**Management**

- Mr. Dennis M. Emery\*\*
- Mr. Thomas J. Pytlík
- Mr. George A. Reamer

Vacant

**General Public**

Vacant

**Occupational Health Standards Commission**

**Labor**

- Mr. James B. Cianciolo
- Mr. Andrew J. Comai
- Ms. Margaret Robinson Faville\*
- Chief Ricardo L. Longoria

**Management**

- Mr. David L. Glynn\*\*
- Mr. John E. Miller
- Mr. Ronald J. Torbert

Vacant

**General Public**

- Mr. Satyam R. Talati

\*Chair \*\*Vice Chair

# Standards Update

## Part 39 – Design Safety Standard for Electrical Systems Major Revisions to General Industry Safety Standard

MIOSHA General Industry Safety Standard Part 39, Design Safety Standard for Electrical Systems, has been revised to reflect the changes announced in the Federal Register, published February 14, 2007, as a final OSHA rule revision.

The MIOSHA rule changes were filed with the Michigan Secretary of State on June 11, 2007, and take effect on June 27, 2007.

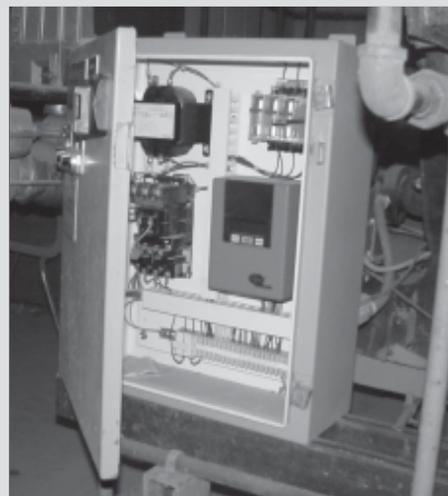
OSHA revised its electrical installation standard in Subpart S in order to reflect the most current practices and technologies in the industry. The revised standard strengthens employee protections and adds consistency between OSHA's requirements and many state and local building codes which have adopted updated National Fire Protection Association (NFPA) 70E, which is based on the 1999 edition National Electrical Code.

"These are the first changes to the electrical installation requirements in 25 years, so it is important the standard reflects the most current practices and technologies in the industry," said Assistant Secretary for Occupational Safety and Health **Edwin G. Foulke Jr.** "The revised standard strengthens employee protections and adds consistency between OSHA's requirements and many state and local building codes."

Changes to OSHA's general industry electrical installation standard focus on safety in the design and installation of electric equipment in the workplace. The updated standard includes:

- A new alternative method for classifying and installing equipment in Class I hazardous locations;
- New requirements for ground-fault circuit interrupters (GFCIs); and
- New provisions on wiring for carnivals and similar installations.

The final rule updates the general industry electrical installation requirements to the 2000 edition of the NFPA 70E, which was used as the foundation of the revised standard. The final rule also replaces the reference to the 1971 National Electrical Code in the mandatory appendix to the powered platform standard with a reference to OSHA's electrical installation standard.



**Bad example:** Cover doors on electrical panel boxes must be kept closed during normal work operations.

## Hexavalent Chromium Standard Portland Cement Settlement Agreement

On April 6, 2007, federal OSHA signed a hexavalent chromium settlement agreement with the Building and Construction Trades Department, AFL-CIO, et al., concerning Portland cement, which is not covered by OSHA's hexavalent chromium standard. Under the agreement, OSHA will implement new *Portland Cement Inspection Procedures* at all construction sites where compliance officers find employee exposures to Portland cement.

This settlement is an agreement to essentially highlight and enforce existing applicable standards that were in place prior to the hexavalent chromium standard and establishing a tracking mechanism for projects using Portland cement. Those applicable standards include provisions for air contaminants, personal protective equipment, sanitation, hazard communication and recordkeeping that apply to operations involving Portland cement.

Federal OSHA is developing a compliance directive to implement the settlement agreement. MIOSHA will review the directive and develop enforcement guidance for Michigan.

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

# Status of Michigan Standards Promulgation

(As of June 27, 2007)

## Occupational Safety Standards

### General Industry

Part 05.	Scaffolding (Joint w/GI-58 & CS-32)	RFR approved by SOAHR
Part 08.	Portable Fire Extinguishers	Amended, effective 5/15/06
Part 17.	Refuse Packer Units	Approved by Commission for review
Part 19.	Crawler, Locomotive, & Truck Cranes	Approved by Commission for review
Part 20.	Underhung Cranes & Monorail Systems	Approved by Commission for review
Part 39.	Design Safety Standards for Electrical Equipment	Final, effective 6/27/07
Part 58.	Vehicle Mounted Elev. & Rot. Platforms (Joint w/GI-5 & CS 32)	RFR approved by SOAHR
Part 62.	Plastic Molding	Approved by Commission for review
Part 76.	Spray Finishing	Final, effective 5/24/07
Part 79.	Diving Operations	Approved by Commission for review
Pending	Ergonomics (Joint)	At Advisory Committee

### Construction

Part 01.	General Rules	Approved by Commission for review
Part 02.	Masonry Wall Bracing	At Advisory Committee
Part 12.	Scaffolds & Scaffold Platforms	Approved by Commission for review
Part 22.	Signals, Signs, Tags & Barricades	Final, effective 11/20/06
Part 26.	Steel Erection	Final, effective 3/29/07
Part 28.	Personnel Hoisting in Steel Erection	Final, effective 3/29/07
Part 29.	Communication Towers	At Advisory Committee
Part 31.	Diving Operations	Approved by Commission for review
Part 32.	Aerial Work Platforms (Joint w/GI 58)	RFR approved by SOAHR

## Occupational Health Standards

### General Industry

Part 301.	Air Contaminants for General Industry	RFR approved by SOAHR
Part 315.	Chromium (VI) for General Industry	Final, effective 8/7/06
Part 316.	Diisocyanates	RFR approved by SOAHR
Part 451.	Respiratory Protection	Final, effective 2/8/07
Part 504.	Diving Operations	Approved by Commission for review
Part 526.	Open Surface Tanks	Revised, effective 5/24/07
Part 528.	Spray Finishing Operations	RFR approved by SOAHR
Part 529.	Welding, Cutting & Brazing	Approved by Commission for review
Pending	Ergonomics (Joint)	At Advisory Committee
Pending	Latex	At Advisory Committee

### Construction

Part 601.	Air Contaminants for Construction	RFR approved by SOAHR
Part 604.	Chromium (VI) for Construction	Final, effective 8/7/06

*The MIOSHA Standards Section assists in the promulgation of Michigan occupational safety and health standards. To receive a copy of the MIOSHA Standards Index (updated March 2006) or for single copies and sets of safety and health standards, please contact the Standards Section at 517.322.1845, or at [www.michigan.gov/mioshastandards](http://www.michigan.gov/mioshastandards).*

RFR Request for Rulemaking  
 SOAHR State Office of Admn. Hearings and Rules  
 LSB Legislative Services Bureau  
 JCAR Joint Committee on Administrative Rules

# Variations

Published July 27, 2007

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

## Variances Requested Construction

**Part number and rule number from which variance is requested**

Part 10 – Lifting & Digging Equipment: R408.41023a (1), Rule 1023a (1)

**Summary of employer’s request for variance**

To allow employer to operate excavation equipment closer to 110/220 volt insulated service conductors than the clearances prescribed in table 1, provided certain stipulations are adhered to.

**Name and address of employer**

Dalessandro Contracting Group

**Location for which variance is requested**

Davison Rd. between Belsay Rd. & Vassar Rd., Burton

**Part number and rule number from which variance is requested**

Part 10 – Lifting & Digging Equipment: R408.41025, 1025a (12)

**Summary of employer’s request for variance**

To allow employer to make Multi-Lifts of up to four bundles of re-steel at one time provided certain stipulations are adhered to.

**Name and address of employer**

Colasanti Specialty Services, Inc.

**Location for which variance is requested**

Greektown Expansion Project

**Part number and rule number from which variance is requested**

Part 1 – General Rules: R408.40115, rule 115 (4) & (5) and Part 11 – Fixed and Portable Ladders: R408.41113, Rule 1113 (5) (6) (8) & (14), and R408.41115, Rule 1115 (8)

**Summary of employer’s request for variance**

To allow employer to paint steel lattice and pole towers ranging from 120 kV to 345 kV in the International Transmission Company territory (See Exhibit A) located in Southeastern Michigan. The work would commence immediately following the variance approvals and continue until the end of the 2007 painting season.

**Name and address of employer**

Morris Painting, Inc.

**Location for which variance is requested**

Various Locations in Southeastern MI

**Part number and rule number from which variance is requested**

Part 32 – Aerial Work Platforms: R408.43209, Rule 3209, Rule 3209 (8) (b), Rule 3209 (8) (c), and Rule 3209 (9)

**Summary of employer’s request for variance**

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

**Name and address of employer**

Allied Ventilation, Inc.

**Location for which variance is requested**

GM Powertrain Lab Consolidation, Pontiac

**Name and address of employer**

Bristol Steel & Conveyor Corp.

**Location for which variance is requested**

2010 MY Phoenix Engine Program, Chrysler-Trenton Plant, Trenton

**Name and address of employer**

Conti Electric

**Location for which variance is requested**

GM Powertrain Engineering Consolidation, Pontiac

**Name and address of employer**

De-Cal Mechanical Inc.

**Location for which variance is requested**

GM Powertrain Engineering Consolidation, Pontiac

**Name and address of employer**

Denn-Co Construction, Inc.

**Location for which variance is requested**

GM Powertrain One Lab, Pontiac

**Name and address of employer**

J P Morgan Chase Data Center, Belleville

**Location for which variance is requested**

Dependent Insulation Company Inc.

**Location for which variance is requested**

St. John Hospital, Detroit

**Name and address of employer**

Johnson Controls, Inc.

**Location for which variance is requested**

GM Powertrain Engineering Consolidation, Pontiac

**Name and address of employer**

Pace Mechanical Services, Inc.

**Location for which variance is requested**

General Motors Powertrain, Pontiac

**Name and address of employer**

Pontiac Ceiling & Partition Co., LLC

**Location for which variance is requested**

United States Postal Service, Pontiac

**Part number and rule number from which variance is requested**

Part 32 – Aerial Work Platforms: R408.43209, rule 3209 (29)

**Summary of employer’s request for variance**

To allow employer to operate an aerial work platform from the deck of a floating vessel provided certain stipulations are adhered to.

**Name and address of employer**

Anlaan Corporation

**Location for which variance is requested**

US 31 Bridge, Grand Haven

**Name and address of employer**

Milbocker & Sons, Inc.

**Location for which variance is requested**

Lincoln Bridge over Cheboygan River, Cheboygan

## Variances Granted Construction

**Part number and rule number from which variance is requested**

Part 10 – Lifting & Digging Equipment: Rule 1015a (2) (d)(f)(g)(h)(i), 1015a (3), 1015a (4); 1018a (1)(2)(21); 1019a (1); and 1021a (4)

**Summary of employer’s request for variance**

To allow the use of a suspended work platform to hoist or suspend personnel or to provide access to elevated work areas in a manner that exposes employees to the least hazard practicable. All requirements of Construction Safety Standard, Part 10. Lifting and Digging Equipment except Rule 1015a

(2) (d)(f)(g)(h)(i), 1015a (3), 1015a (4); 1018a (1)(2)(21); 1019a (1); and 1021a (4)

**Name and address of employer**

Hamon Custodis, Inc.

**Location for which variance is requested**

Monroe Power Plant, Monroe

**Part number and rule number from which variance is requested**

Part 32 – Aerial Work Platforms: R408.43209, Rule 3209, Rule 3209 (8) (b), Rule 3209 (8) (c), and Rule 3209 (9)

**Summary of employer’s request for variance**

To allow the employer to firmly secure scaffold planks to the top of the intermediate rail of the guardrail system for use as a work platform in accordance with certain stipulations.

**Name and address of employer**

Ann Arbor Ceiling & Partition Co., LLC

**Location for which variance is requested**

MGM Grand Casino, Detroit

**Name and address of employer**

Wm. Crook Fire Protection Co.

**Location for which variance is requested**

Ford Van Dyke Transmission Plant, Sterling Heights

**Name and address of employer**

Denn-Co Construction, Inc.

**Location for which variance is requested**

MGM Casino, Detroit

**Name and address of employer**

Limbach Company LLC

**Location for which variance is requested**

St. John Hospital, Detroit

**Name and address of employer**

Ventcon

**Location for which variance is requested**

GM Powertrain Lab Consolidation, Pontiac

## Variances Revoked General Industry

**Part 1, General Rules; Rule 34(3)**

Zurn Industries Inc., Kalamazoo

**Part 1A, Abrasive Wheels; Rule 122(1)**

Hovis Screwlock Co., Warren

**Part 7, Guards for Powered Transmission; Rule 716**

Brothers Inc., Hermansville

**Part 7, Guards for Powered Transmissions; Rule 763(1)**

Hamill Mfg. Co., Division Firestone Tire & Rubber, Washington

**Part 17, Refuse Packer Units; Rule 1732(1)**

Steelcase Wood Furniture, Kentwood

**Part 23, Power Presses; Rule 2321**

Allied Products Corporation, Hillsdale

Canady Tube & Metal Fabricating Co., Detroit

**Part 27, Woodworking Machinery; Rule 2730(1)**

Deklomp, Holland

**Part 38, Hand & Portable Powered Tools; Rule 2832(1)**

Champion Spark Plug Co., Rubber Room, Detroit

Champion Spark Plug Co., Pressing Dept., Detroit

Detroit Rubber Company, Detroit, MI 48204

Elastodyne, Unit of ITT Blackburn Co., Spring Lake

Ex-Cell-O Corporation, Holland

# MIOSHA News Quiz

## Topic: Excavations and Trenching

By: Paul J. Wrzesinski  
 Safety Section Supervisor  
 Construction Safety & Health Division

### Questions

1. True or False – Employees are working in a trench 6 feet deep and 10 feet wide at the bottom. The soil is a mixture of clay and granular soil. It is okay for the sides of this excavation to be vertical with no shoring because employees can get far enough away from a wall collapse due to the width of the trench at the bottom.

2. True or False – During an excavation to uncover a leaking underground gasoline storage tank, employees must enter the excavation to disconnect some underground piping from the tank. As they enter, they notice a strong smell of gasoline. The employees should exit the trench, put on whatever respirators they have available and re-enter the excavation.

3. True or False – An excavation less than 5 feet in depth must be effectively protected when examination of the ground indicates hazardous earth movement may be expected.

4. True or False – The employer must consider all of the following factors to determine the angle of repose and the design of the supporting system for a side of an excavation:

- A. Depth of cut and type of soil.
- B. Possible variation in the water content of the material while the excavation is open.
- C. Anticipated changes in the material due to exposure to air, sun, water, or freezing.
- D. Load imposed by structures, equipment, overlying material, or stored material.
- E. Vibration from traffic, equipment, or blasting.

5. True or False – A trench only needs to be inspected by a qualified person after a rainstorm.

6. True or False – The employer must identify the location of all underground utilities before beginning an excavation. MISS DIG may be contacted for this purpose. After the appropriate amount of time has passed, the employer should contact MISS DIG a second time to ensure that all the appropriate utility companies have responded

to the MISS DIG notice, and have been to the site to mark their particular utility. If a utility has not yet responded, they should be contacted directly.

7. True or False – I have contacted MISS DIG and they have marked all the utilities so it's okay to start excavating with my power equipment, as long as I stay a couple of feet away from the marks.

8. True or False – I have hit an underground electric cable and exposed an energized conductor. As long as I stay a couple of feet away I can still continue to install the sewer line until public utility personnel arrive to address the situation.

9. True or False – I can put my spoil pile next to the excavation as long as it is no more than 2 feet high.

10. True or False – I have a trench that is 10 feet deep, 30 feet long and 3 feet wide. If I bench the sides then I can cut the lower bench at 5 feet from the bottom of the trench.

11. True or False – I can have my employees stay inside the trench box when I move it as long as they are on the opposite end from where the excavator is pulling it.

12. True or False – An excavation 48 or more inches in depth and occupied by an employee must be provided with either a ladder extending not less than 3 feet above the top as a means of access or with an earth ramp. The lateral travel along the wall of a trench to a ladder or other means of egress cannot exceed 25 feet.

### Answers

1. False – "The trench must be sloped, shored, or a protective system (e.g., trench box) provided in accordance with Part 9, Excavation Trenching and Shoring. Part 9, Rule 941(1) states, "The side of an excavation more than 5 feet deep shall be sloped as prescribed in table 1, unless supported as prescribed in this part."
2. False – Part 9, Rule 943(a) states; "Where an oxygen deficiency (an atmosphere that contains less than 19.5% oxygen) or a hazardous atmosphere exists, such as in excavations in areas where hazardous substances are stored nearby, the atmosphere in the excavation shall be tested before beginning an excavation. See Part 9, Rule 931(1).
3. True – See Part 9, Rule 941(2).
4. True – See Part 9, Rule 942(1).
5. False – Part 9, Rule 932(5) states; "...After every rainstorm or other hazard-producing occurrence, an inspection shall be made by a qualified employee for evidence of possible slides or cave-ins. Where these conditions are found, all work shall cease until additional precautions, such as additional shoring or reducing the slope, have been accomplished."
6. True – It is the employer's responsibility to identify all underground utilities before beginning an excavation. See Part 9, Rule 931(1).
7. False – If underground utilities are to be exposed or are likely to be exposed, only hand digging shall be employed. See Part 9, Rule 931(2).
8. False – The employer must evacuate the employees from the immediate area and notify the public utility. See Part 9, Rule 931(3).
9. False – Excavated material must be stored not less than 2 feet away from the edge of the excavation, regardless of the height of the pile. See Part 9, Rule 933(2).
10. False – Part 9, Rule 944(3) states; "When benching a side of a trench, the height of the lower bench shall not be more than the lesser of 5 feet or the width of the trench measured at the bottom." Therefore, the lower bench must be 3 feet or less from the bottom of the trench.
11. False – Part 9, Rule 945(3) states; "An employee shall not be allowed in shields when shields are being installed, removed or moved."
12. True – See Part 9, Rule 933(5). An earth ramp must meet the requirements of Part 9, Rule 933(6).

**M&W Industries**

*Cont. from Page 1*

ducted four inspections at two M&W Industries sites. Despite a settlement agreement from the 2005 inspection, the follow-up inspections found that the firm failed to abate identified hazards. Specifically, the company failed to: install needed guards, provide required employee training on worksite chemicals, provide audiometric testing and training, train employees on the safe operation of overhead and gantry cranes, and enforce the use of lockout.

In addition, during the follow-up inspection, new violations were noted including: two Willful violations for lack of hydraulic power press point of operation guarding and training for employees operating press brakes; three Serious violations related to metalworking machinery; four Repeat-Serious violations for previously cited items, including personal protective equipment, lack of training on lockout, lack of training for machine operator, and not enforcing use of lockout; and two Other-than-Serious violations for injury/illness recordkeeping (with no monetary penalties).

**MIOSHA Violations**

**Inspection Citations – 13550 Helen Street**

- 2 Follow-up Inspections
- 9 Fail-to-Abate Notices \$79,290
- 1 Planned Partial Inspection
- 3 Repeat-Serious \$24,000

**Inspection Citations – 20101 Hoover Street**

- 1 Employee Complaint
- 2 Willful \$112,000
- 3 Serious \$12,000
- 1 Repeat-Serious \$8,000
- 2 Other-than-Serious \$1,600

**Total Proposed Penalties: \$236,890**

A Willful violation is one committed with an intentional disregard of the requirements of MIOSHA regulations, or plain indifference to employee safety and health. A Serious violation



*Bad example: The blade on a shear machine must be guarded to 1/4-inch of the material being worked on.*

exists where there is a substantial probability that serious physical harm or death can result to an employee. An Other-than-Serious violation is a condition that would probably not cause death or serious physical harm but would have a direct and immediate relationship to the safety and health of employees.

MIOSHA scheduled inspections target establishments with high injury/illness rates and a high incidence of lost workday cases, based on Michigan data. The intent of the scheduled inspections is to identify hazardous conditions, so that the hazards can be corrected before injuries and illnesses occur.

**Worker Protections**

“Taking the time to follow MIOSHA regulations can not only protect workers—it can greatly enhance a company’s bottom line,” said MIOSHA Director **Doug Kalinowski**. “Successful Michigan companies have shown that a strong safety and health program contributes to increased production, improved quality and greater profits.”

The MIOSHA Consultation Education and Training (CET) Division has nearly 40 safety and health consultants that can help provide abatement advice to companies, as well as furnish information on building an effective safety and health management system.

M&W Industries started in 1981, and employs about 575 workers at four plants in the Detroit area. The company manufactures metal parts for the defense, automotive, and material handling industries. Their major product lines include defense weldments (assemblies whose component parts are joined by welding), material handling products, and other metal welded components.

The company has 15 working days from receipt of the citations and notices to contest the alleged violations and penalties. ■



*Bad example: All three stations on this ironworker machine must be guarded.*

**Wood Truss Bracing**

*Cont. from Page 6*

were designed when properly installed, this includes proper bracing both during erection and afterwards.

Like all industries, in construction, time equates to money. The longer it takes to build something, the less profit there is – which sometimes leads to unacceptable shortcuts. Typically it is the diagonal bracing that is omitted. Short lengths (approximately 27-inches long) of 1x 4 or 2x 4 lumber are used as “spacers” between the trusses (typically with one nail at each end). Longer lateral braces are only installed after the “spaced” trusses are moved to their final position on the bearing walls.

During this time there is a pair of carpenters working within or on top of these “spaced” trusses. The Building Component Safety Information (BCSI) 1-03 requires all bracing to be a minimum of 2x4 lumber and installed with a minimum of two nails per truss.

Wood trusses are just like dominoes. Push one over and they all collapse! Using short spacers with or without lateral bracing will ensure two things. When the trusses collapse, they will all fall – and when they are on the ground, they will all be equally spaced.

Other hazards that employers need to be aware of when erecting trusses are energized power lines, such as distribution, individual service and street lighting. There is specific language in BCSI 1-03 alerting contractors to the potential for electrocution. A few years ago in St. Clair Shores, a load of trusses were off-loaded under energized power lines. Two employees were electrocuted while hooking up the crane’s load line to a truss.

**Help is Available**

Groups such as the Wood Truss Council of America and the Truss Plate Institute were formed to help building designers and contractors take advantage of the wooden trusses and eliminate the guesswork in their installation. Their recommendations are published in the booklet commonly known as BCSI 1-03.

Critical erection information from this booklet is included in every truss delivery made in the United States. Every contractor receiving wood trusses receives a basic diagram of the trusses that indicates where permanent bracing has to be installed; and a group of B-series Summary Sheets that give examples and guidance for the temporary bracing for the trusses being installed.

All residential builders are encouraged to contact the Construction Safety and Health Division at 517.322.1856 if they have questions regarding worksite health and safety or compliance issues.

The Consultation, Education and Training (CET) Division provides training and onsite services for residential builders at the employer’s request, free of charge. The CET Division can be contacted by calling 517.322.1809, or visiting the website at [www.michigan.gov/cet](http://www.michigan.gov/cet). ■

## Exposure to Isocyanates

Cont. from Page 9

large parts beginning at the end nearest the exhaust ventilation and work his way to the back. This ensured the spraying operation was between the employee and the exhaust ventilation.

- The worktable located in the spray booth was moved near the exhaust ventilation to reduce the employee's exposure during the transfer of material and the cleaning of equipment.

- The employer hired a ventilation contractor to make changes to the spray booth to account for the additional length added to the spray booth and to increase overall ventilation.

- A new magnehelic gauge was installed and a preventive maintenance schedule was created for filter changes for the spray booth based upon the gauge reading.

- Hand pumps were added to solvent containers to reduce exposure to chemicals during transfer operations.

- Paint was delivered in 1-gallon cans to reduce exposures and waste encountered when using open containers for transferring paint. Paint had been previously delivered in 5-gallon cans.

- The employer required the use of respiratory protection at all times within the spray booth. Employees wore a full face respirator with cartridges for preparation and cleaning activities, and a supplied air respirator for all spray painting activities.

- The employer developed and implemented a site-specific respiratory protection program that included filter change schedules, fit testing and training.

- Employees involved in the painting operation were placed in a medical surveillance program that included work and medical history questionnaires, physical exams by a physician, and lung function testing.

- Employees were given specific training on the health effects of isocyanates on the body and the proper methods and equipment needed to protect them from this chemical.

### Conclusion

After the engineering and work practice controls had been implemented, the employer contacted the MIOSHA Consultation, Education and Training (CET) Division to perform air monitoring to reevaluate the painter's exposure to MDI. The results of the air monitoring showed that employee exposures were well within the Ceiling limit of 0.2 mg/m<sup>3</sup> as follows:

Sample #1 - 0.050 mg/m<sup>3</sup>.

Sample #2 - 0.006 mg/m<sup>3</sup>.

Sample #3 - 0.024 mg/m<sup>3</sup>.

Although employee exposures were well below the Ceiling limit of 0.2 mg/m<sup>3</sup> for MDI, the company is continuing to require the use of the supplied-air respirator and the medical surveillance program due to the hazards associated with isocyanates. Because of the employer's prompt actions, the case was closed within a few weeks. ■

## Workplace Heat Hazards

Cont. from Page 7

pervisors by providing accurate verbal and written instructions about heat stress, including self-determination of exposures. Employees should be aware of the signs and symptoms of heat stress and should be encouraged to detect these signs in themselves and in coworkers. Employees should also be permitted to practice self limitation of heat exposure based on these signs.

**Heat Stress Hygiene Practices** – During the investigation it was noted that most employees did drink water, but were not monitored or encouraged to drink cool water every 20 minutes. Additionally, aside from the clothing worn by dishwashers, employees were required to wear uniforms that through fabric and style (high collars, neckties, and chef's hats) limited evaporation.

Employers should encourage fluid replacement and the use of proper clothing. Employees should drink small volumes (approximately 1 cup) of cool liquid every 20 minutes. Free movement of cool, dry air over the skin's surface maximizes heat removal through evaporation of sweat from the skin; water-vapor-impermeable or thermally insulated clothing restricts heat removal.

**Medical Surveillance** – The investigation revealed the employer did not screen employees to identify those employees more susceptible to heat.

Employers should allow pre-placement screening to identify those employees susceptible to systemic heat injury. Employees who take medications that may compromise normal cardiovascular, blood pressure, body temperature regulation, renal or sweat gland functions; and those employees who abuse alcohol, may have an increased susceptibility to heat stress. Employers can also encourage healthy life styles and ideal body weight.

**Acclimatization** – During the investigation

it was noted the employees were acclimated to the heat exposure.

Acclimatization is a gradual physiological adaptation that improves an individual's ability to tolerate heat stress. Full-heat acclimatization requires up to three weeks of continued physical activity under heat-stress conditions similar to those anticipated for the work, with a loss occurring after four days. Employers can develop a plan to expose employees to heat at gradually increasing rate over a five-day period.

### Company Abatement

The employer submitted the information below as actions taken to address the issue:

- Air conditioning equipment in restaurant was repaired.

- Cooling vests and cooling bandanas were purchased for employees.

- Temperature monitoring control devices were purchased and placed in the kitchen and dining room.

- A temperature monitoring and tracking procedure was implemented.

- Management attended a MIOSHA safety in the workplace seminar.

- Signs were posted educating the staff about heat stress and how to recognize the symptoms in themselves and others.

- Employees were given access to cool beverages.

- Major renovations of the building which would include replacing HVAC equipment were planned.

### CET Division Services

If you have any questions on heat stress, or need a workplace evaluation, please call the MIOSHA Consultation Education and Training (CET) Division at 517.322.1809, or visit our website [www.michigan.gov/miosha](http://www.michigan.gov/miosha).

*An article on heat stress hazards was in the Summer 2006 issue of the MIOSHA News.* ■

## Congratulations Associated General Contractors of Michigan!

MIOSHA is proud to recognize, along with our alliance partner the AGC of Michigan, the Michigan recipients of the 2006 National AGC Safety Award. MIOSHA Construction Safety and Health Division Manager Patty Meyer was the keynote speaker for the award ceremony. "Everyone in this room has set the bar high for safety and health programs," said Meyer.



# How To Contact MIOSHA

**MIOSHA Hotline** 800.866.4674  
**Fatality/Catastrophe Hotline** 800.858.0397  
**General Information** 517.322.1817  
**Free Safety/Health Consultation** 517.322.1809  
**Injury & Illness Recordkeeping** 517.322.1848

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

DIVISION	PHONE	DIRECTOR
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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	517.322.1851	John Peck
OFFICE	PHONE	MANAGER
Asbestos Program	517.322.1320	George Howard
CET Grant Program	517.322.1865	Louis Peasley
Employee Discrimination Section	248.888.8777	Jim Brogan
Management Information Systems Section	517.322.1851	Bob Clark
Standards Section	517.322.1845	Marsha Parrott-Boyle

**Website:** [www.michigan.gov/miosha](http://www.michigan.gov/miosha)

If you would like to subscribe to the MIOSHA News, please contact us at 517.322.1809. 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.

The Department of Labor & Economic Growth is an equal opportunity employer/program. This newsletter will be made available in alternate formats on request.



**Director: Doug Kalinowski**

The MIOSHA News is a quarterly publication of the Michigan Occupational Safety and Health Administration (MIOSHA), which is responsible for enforcing the Michigan Occupational Safety and Health (MIOSH) Act.

The purpose is to educate Michigan employers and employees about workplace safety and health. This document is in the public domain and we encourage reprinting.

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