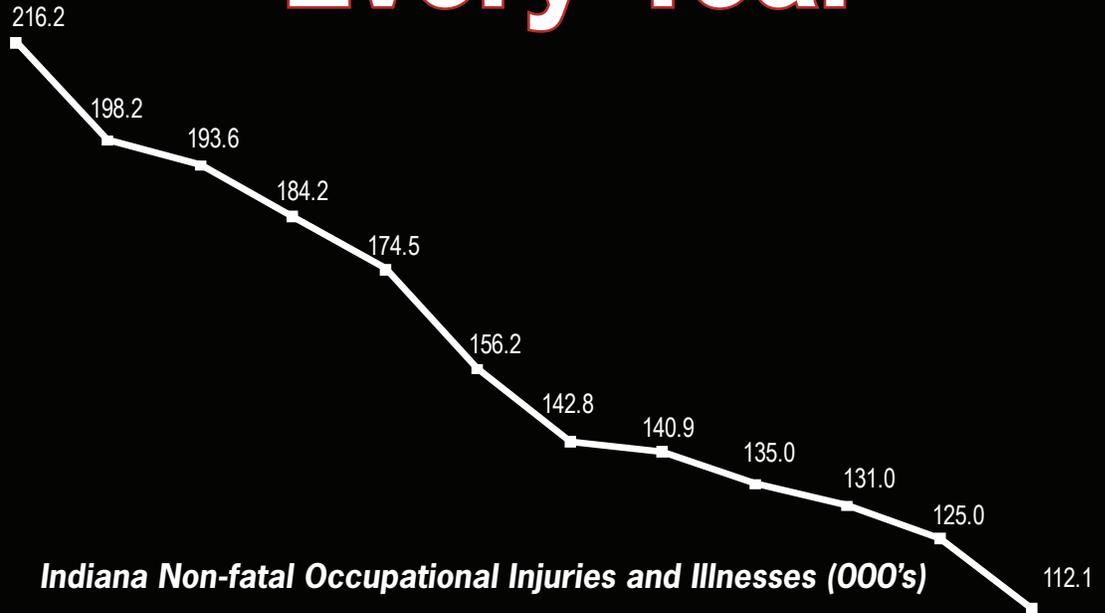


# INReview

An annual publication of the Indiana Department of Labor

Indiana Occupational  
Safety and Health  
2010

## Indiana Workplaces: Getting Safer Every Year



### “It Happened to Our Co-worker”

Read about a workplace tragedy from an Indiana employer’s perspective

### “IOSHA Found It”

Learn more about the hazards IOSHA is finding in Hoosier workplaces

### Real Hazards, Real Workplaces

Can you spot the safety or health hazard?

*Advancing the safety, health and prosperity of Hoosiers in the workplace*

# Advancing Occupational Safety and Health

**Work safely. Someone at home is counting on you.**



**Our** mission is to *advance the safety, health and prosperity of Hoosiers in the workplace*. To make significant strides towards achieving this mission, we emphasize a multi-pronged approach of enforcement and voluntary employer compliance. Our department administers the Indiana Occupational Safety and Health Administration (IOSHA) program for enforcement. In 2009 our Compliance Safety and Health Officers, conducted more than 2,000 enforcement inspections.

We also provide many opportunities for employers to receive free and confidential on-site consultations and compliance assistance for OSHA standards and regulations through our INSafe Division. INSafe Safety and Health Consultants fulfill more than 450 requests initiated by Indiana employers for consultation each year.

Headquartered in Vincennes, Indiana at Vincennes University, the Bureau of Mines is also a division of the Indiana Department of Labor. The Bureau of Mines

inspects all Indiana underground coal mining operations. The Bureau of Mines is also responsible for certifying specific mining operations.

From work-hour restrictions to prohibited and hazardous occupations, the department's Bureau of Child Labor inspects Hoosier employers that employ teens. Many free training opportunities and educational resources regarding the employment of teens are also made available by the Bureau of Child Labor.

We invite you to provide us with your feedback regarding our services, resources and publications by

taking our online customer satisfaction survey available at [www.in.gov/dol/2605.htm](http://www.in.gov/dol/2605.htm). We look forward to helping make Indiana workplaces much safer and healthier places to work in 2010. To learn more about our department, outreach programs and services, please visit our website at [www.in.gov/dol](http://www.in.gov/dol).

# 2010

**Indiana Department of Labor**

# IN Review

Indiana Occupational Safety and Health - 2010

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**IN Review** is an annual publication of the Indiana Department of Labor's Quality, Metrics and Statistics Division.

A special thanks goes to the staff of the Indiana Quality, Metrics and Statistics Division for the collection of the Bureau of Labor Statistics Survey of Occupational Injuries and Illness (SOII) and Census of Fatal Occupational Injuries (CFOI).

Additional information about 2010 **IN Review** contributors may be found on page 37 of this magazine.

On the cover of **IN Review**: According to the Bureau of Labor Statistics' Survey of Occupational Injuries and Illnesses (SOII), in 2008, there were 112,100 work-related injuries and illnesses in Indiana. This is the fewest on record for the State of Indiana.

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# Indiana Labor Leaders



*"We'll never be completely satisfied with the number of workplace incidents until the number is zero, but a visible reduction shows that Hoosier employers and employees are working hard to ensure worker safety and health. Through continued voluntary compliance, and efforts of the Indiana Department of Labor, we are hopeful that every year will prove to be the safest year yet for Hoosier workers."*

*Mitchell Daniels*  
Mitchell E. Daniels, Jr.  
Governor of Indiana

**As** we enter into a new year, Hoosier employers and businesses are confronted with many new challenges in order to achieve their goals, because, as we all know, budgets are tight. The Indiana Department of Labor faces those same challenges. While we may wish for an unlimited amount of resources to use in our efforts to advance occupational safety and health, that isn't realistic, and we are faced with the task of developing new, more economical methods of performing our duties.

It is our intention that this edition of the *IN Review* provides useful information and educational materials to enhance your occupational safety and health programs.

We are constantly striving to find more cost-effective ways to perform our services, without reducing the quality and integrity of our programs.

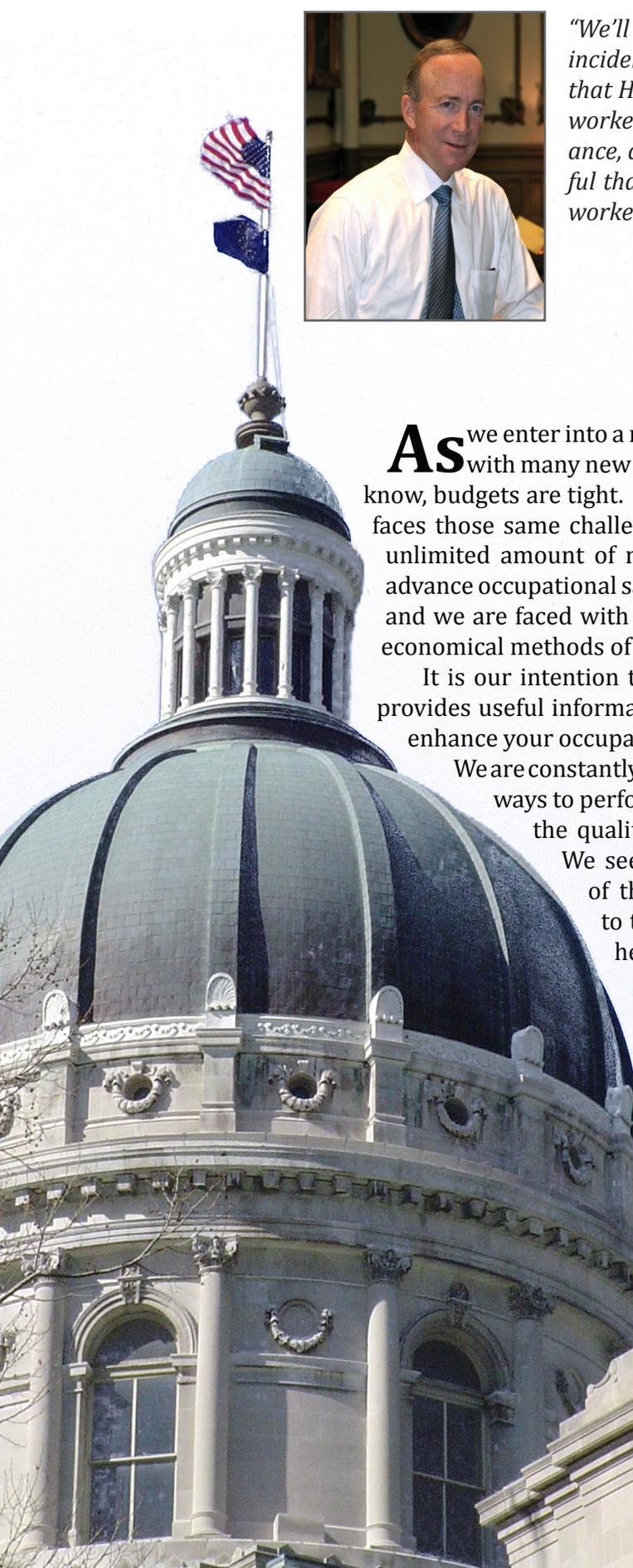
We seek to use our resources on the most important functions of the Indiana Department of Labor. We remain committed to those core programs which exist to keep workers safe and healthy while on the job.

We appreciate the diligent efforts of you, Indiana's employers and employees, to ensure that your workplaces maintain strong worker safety and health programs. Ensuring Indiana workplaces are compliant, and keeping those working at them safe, is our ultimate goal. All Hoosier workers should leave their homes to go to work confident that they will return safe and healthy.

Sincerely,

*Lori Torres*

Lori A. Torres  
Commissioner of Labor



# Occupational Safety and Health *IN* Review

A review of the latest occupational safety and health injury, illness and fatality trends indicates significant progress is being made in Indiana. Information used in *IN Review* was provided by the federal Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI), Survey of Occupational Injuries and Illnesses (SOII) and data from the Indiana Occupational Health and Safety Administration (IOSHA).

•In 2008, the State of Indiana reported 132 work-related deaths (Figure 1), the second fewest on record. The workplace fatality rate was 4.1 per 100,000 Hoosier workers (Figure 2), which was released for 2007. This is the lowest rate on record. The previous low of 4.4 per 100,000 Hoosier workers, was reported in 2003.

Indiana's top three industries in 2008 with workplace fatalities are:

<b>Agriculture</b>	22
<b>Construction</b>	19
<b>Manufacturing</b>	18

•The number of non-fatal occupational injuries and illnesses in 2008 was 112,100 (Figure 3). This is the lowest number of non-fatal injuries and illnesses recorded for the State of Indiana and represents a decrease of 12,900 as compared to 2007.

Indiana's top three industries in 2008 with non-fatal injuries and illnesses in raw numbers are

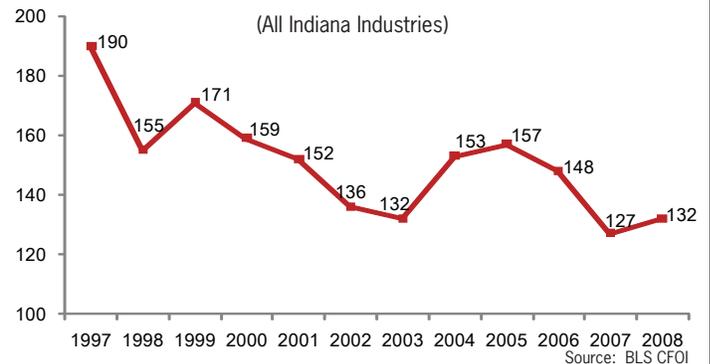
<b>Manufacturing</b>	30,800
<b>Healthcare &amp; Social Assistance</b>	16,000
<b>State &amp; Local Government</b>	15,500

•Indiana's non-fatal occupational injury and illness rate is 4.9 per 100 employees (Figure 4). While Indiana continues a downward trend, the non-fatal occupational injury and illness rate is greater than the U.S. total recordable rate of 4.2.

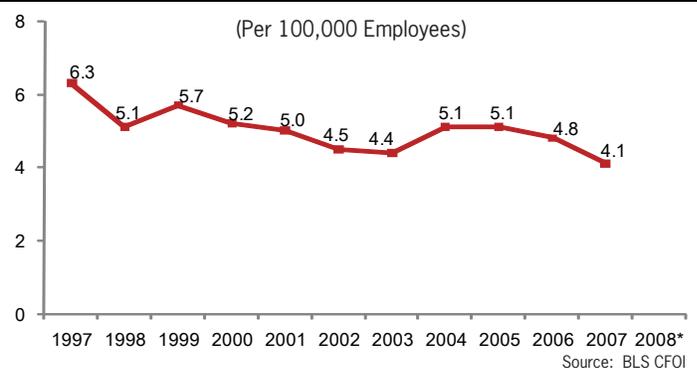
Indiana's top three industries reporting injuries and illnesses by rate in 2008 are:

<b>Agriculture, Forestry &amp; Fishing</b>	7.6
<b>Healthcare &amp; Social Assistance</b>	6.4
<b>Arts, Entertainment &amp; Recreation</b>	6.3

**Figure 1: Indiana's Fatal Occupational Injuries**

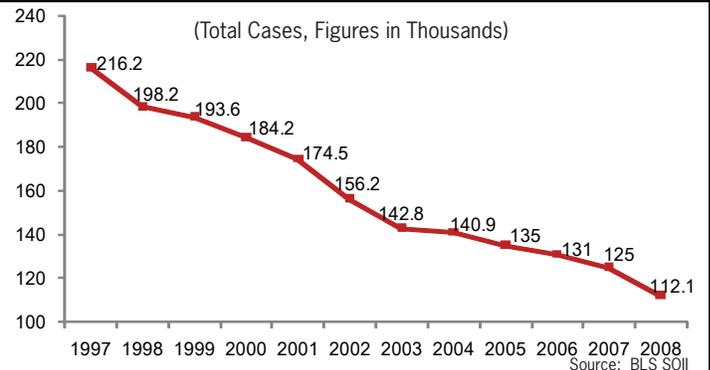


**Figure 2: Indiana's Occupational Fatality Rate**

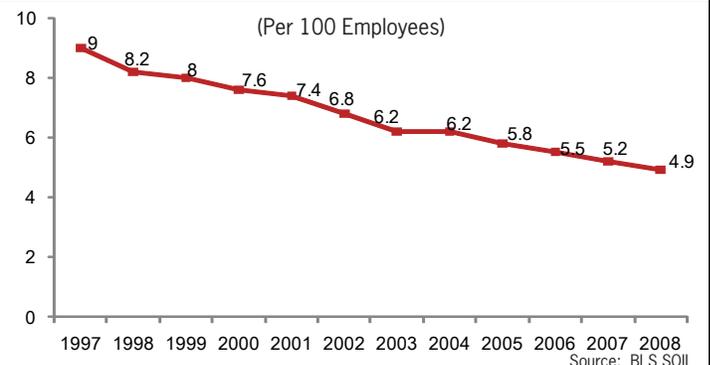


\*2008 occupational fatality rate will be available in the second quarter of 2010.

**Figure 3: Indiana's Non-fatal Occupational Injuries & Illnesses**



**Figure 4: Indiana's Non-fatal Occupational Injury & Illness Rate**



# IOSHA Cites Top Ten Most Violated Standards

Review the top ten most frequently cited OSHA standards cited by Indiana Compliance Safety and Health Officers and Construction Safety Inspectors.



HazCom: Unlabeled Container. (Photo by Jeanne Hedge, IOSHA Compliance Safety and Health Officer)

**1. 1910.1200: Hazard Communication.** Employers are required to have a written Hazard Communication (HazCom) program, Material Safety Data Sheets (MSDSs), provide training and label containers that contain chemicals.

SEE Page 13  
357 citations  
\$35,101 in penalties

**2. 1910.305 & 1926.405: Electrical Wiring.** Hazardous energy sources must be controlled through the use of one of the following: insulation, guarding, grounding or electrical protective devices, coupled with safe work practices.

165 citations  
\$21,286 in penalties



Electrical: Wire nest. (Photo by Roy Pannell, INSafe Safety Consultant)

**3. 1926.451: Scaffolds.** Each scaffold and scaffold component must be capable of supporting its own weight and at least four times the maximum intended load applied or transmitted to it without failure. Improperly erected scaffolds can result in the planking or support giving way, which may cause the employee to slip or fall.

SEE Page 14  
147 citations  
\$77,197 in penalties



Employees work from a scaffold during the construction of the new Indianapolis airport. (Photo provided by Monomedia, Inc.)

**4. 1910.134: Respiratory Protection.**

Employers are required to protect employees from dangerous exposures to chemicals and other toxic vapors. These types of hazards have the potential to cause cancer, lung impairment, other diseases and even death.

147 citations  
\$37,645 in penalties



Improper storage of a half mask, negative pressure respirator. (Photo by Jeanne Hedge, IOSHA Compliance Safety and Health Officer)



Fall Protection: Employee is not properly protected from a potential fall. (Photo from IOSHA Compliance Inspection)

**5. 1926.501: Fall Protection.** Fall protection for employees must be provided at four feet in general industry, five feet in maritime and six feet in construction. However, regardless of the fall distance, fall protection must be provided when working over or on dangerous equipment and machinery.

128 citations  
\$88,107 in penalties

**6. 1910.303: Electrical.** Electric equipment must be free from recognized hazards that are likely to cause death or serious physical harm to employees. Employers must provide workers with the appropriate training on safe work practices and proper procedures for working with electrical equipment.

SEE Page 8  
115 citations  
\$48,410 in penalties



Electrical: Missing Ground Prong. (Photo by Jeanne Hedge, IOSHA Compliance Safety and Health Officer)



Machine Guarding: A sign posted on the machine indicates the need for the machine guard to remain in place. (Photo by Jeanne Hedge, IOSHA Compliance Safety and Health Officer)

## **7** 1910.212: Machine Guarding.

Machine safeguards must be used to prevent hands, arms or any part of a worker's body or clothing from making contact with dangerous moving parts.

101 citations  
\$61,137 in penalties

## **8** 1926.20: General Safety and Health.

Employers must provide all employees with a safe and healthy working environment, free of recognized hazards. This includes developing safety and health programs, providing training and the appropriate personal protective equipment (PPE).

93 citations  
\$66,375 in penalties

## **9** 1910.146: Permit Required Confined Spaces.

Before allowing employees to enter into a permit required confined space (PRCS), employers must develop and implement a written PRCS program. Programs must include annual employee training and processes for locking out machines and cutting off power sources.

SEE Page 11  
85 citations  
\$173,094 in penalties

## **10** 1926.150: Fire Protection.

Employers are held responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition work. The employer must also provide the appropriate firefighting equipment.

80 citations  
\$683 in penalties



A fire extinguisher found in an Indiana workplace. (Photo by Jeanne Hedge, IOSHA Compliance Safety and Health Officer)

# Costliest:

**1910.1052: Methylene Chloride (MC).** If there is any potential exposure to MC, the employer is required to perform an initial monitoring for MC. If employees' exposure to MC is below the short-term exposure limit (STEL) and/or the permissible exposure limit (PEL), employers are required to monitor, train and provide the appropriate PPE. If the employees' exposure level reaches the STEL and/or the PEL, the employer is required to implement all applicable elements of 1910.1052(d)-(m).

32 citations  
\$5,299 average per each violation



PPE: IOSHA Construction Safety Inspector Jerry Townsend wears the appropriate PPE for an inspection. (Photo by Michelle Ellison, INSafe Marketing Manager)

PRCS), employers must develop and implement a written PRCS program. Programs must



PRCS: A sign on a permit-required confined space warns employees of the hazard. (Photo by Jeanne Hedge, IOSHA Compliance Safety and Health Officer)

**IOSHA Inspections**  
**by the Numbers**

**2,200+** inspections were conducted by IOSHA inspectors in 2009.

**3,609** citations were issued by IOSHA inspectors in 2009.

**\$1.82+** million in penalties were assessed by IOSHA in 2009.

# Teen and Young Worker Safety and Health

Nationwide, more than 200,000 teen and young workers will get hurt at work this year.

Watch our **Teen Worker Safety Video** online at [www.in.gov/dol](http://www.in.gov/dol) by clicking on the “Publications” link.



Photo taken by Jason Reason, IOSHA Senior Industrial Hygienist

**Most** teens and young adults start work without knowing about workplace safety and the laws that help protect them. While working can be a positive experience for teens and young workers, it also has risks. In Indiana, since 2003, **63 workers under the age of 24** have been killed while working. These workers have suffered fatal injuries as a result of **transportation incidents** (35), **contact with objects** (12) **homicides** (7) and **falls** (6).

Employers, like parents, do not want young people to be injured on-the-job. Because of their eagerness and willingness to please, young workers typically hesitate to ask questions, and often times, they fail to recognize hazards. In addition to the employer’s concern for the health of the workers they employ, work-related injuries are just bad business. An injured employee cannot work at full capacity, or is unable to work at all. In Indiana, in 2008, young workers suffered **2,750 injuries and illnesses that required one or more days away from work**.

In 2008, the predominant nature of a non-fatal occupational injury suffered by workers under the age of 24 was **sprains, strains & fractures** (960). The most common injury event for young workers was being **struck by an object** (340), which was closely followed by **falls on the same level** (330).

Injuries that occur among young workers can

present conflicts with parents, insurance companies, the Indiana Occupational Safety and Health Administration (IOSHA) and the Bureau of Child Labor. In some cases, injuries may result in fines or penalties, lawsuits, increased worker’s compensation premiums and unwanted publicity.

Regardless of the industry, workers should be aware of some general information about occupational safety and health. Information should include:

- All jobs have hazards.
- Workers should be properly trained on how to do their tasks safely.
- Employers must provide adequate supervision.
- On-the-job injuries and illness can be prevented.
- Young workers should know their rights and speak up about their concerns.
- Workers should know their obligations to follow the employer’s safety and health rules.

For more information regarding teen worker safety, visit the Indiana Department of Labor’s **Teen Worker Safety** page at [www.in.gov/dol/2638.htm](http://www.in.gov/dol/2638.htm). To learn about Indiana Child Labor laws please visit [www.in.gov/dol/childlabor.htm](http://www.in.gov/dol/childlabor.htm).

# Electrocution in the Workplace

**Each** year in the United States, electrocutions result in over **200 workplace fatalities**. Understanding how to safeguard yourself from the risks associated with working with electricity is an important first step to ensure that you remain safe. Many safety procedures and guidelines have already been developed, but unless they are implemented by management and adhered to by workers, they will do nothing to deter electrical fatalities.

Electrical safety precautions include testing circuits and equipment regularly, and ensuring that circuits are de-energized before working on them. Another widely used electrical safety precaution includes shutting off the power to machines and equipment, and making certain that it remains off, while a worker is within harm's way. The most common and effective way of ensuring this is through the presence and utilization of a lockout/tagout mechanism, as well as a local disconnect within the line of sight of a worker, in order to disconnect the device when it is in use. The utilization of these and other electrical safety methods will help to decrease the number of worker electrical fatalities.

In addition to the methods listed above, it is important that employers and employees do regular workplace audits, in order to recognize and evaluate the electrical hazards specific to their workplace. While implementing a lock-out/tag-out policy and turning off energy sources will decrease the likelihood of injury or death, a site-specific safety plan will prove to

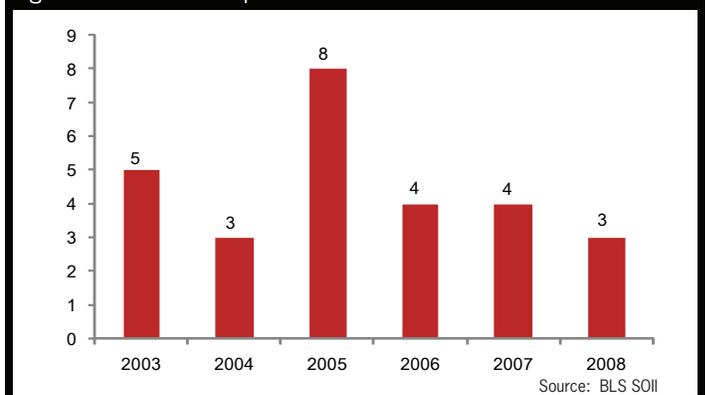
be much more effective at reducing these incidents. Once hazards have been recognized and evaluated, employers and employees can begin to develop methods to control them.

To assist you in recognizing, evaluating and controlling electrical hazards, view the National Institute for Occupational Safety and Health's Electrical Safety: Safety & Health for Electrical Trades Student Manual. This can be found on [www.cdc.gov/niosh](http://www.cdc.gov/niosh), under "Workplace Safety & Health Topics: Electrical Safety."



Overhead power lines.  
(Photo provided by  
Rush County Sheriff)

Figure 5: Indiana Occupational-related Electrocutions



## It Happened Here: St. Joseph County, Indiana

**Background:** The predominant worker activities in recent electrocutions are constructing, repairing or cleaning. Between 2003 and 2008, nine electrocution fatalities occurred in Indiana as a result of contact with transformers or other electrical components.

**Fatal Event:** On August 26, 2009, in St. Joseph County, Indiana, a 43 year-old journeyman plumber was replacing a water meter in a hotel crawlspace. For illumination purposes, the journeyman plumber used a portable work light in the crawlspace. The crawlspace was wet from recent rains. Additionally, the portable work light was missing a ground

prong and had a cut in the cord. The journeyman plumber was found by the hotel maintenance worker, lying face down and unresponsive.

The journeyman plumber died as a result of electrocution.

**Discussion:** Employees must be provided with written work practices as well as training that adequately addresses the hazards of working with equipment or machinery. A visual inspection of all equipment prior to its use for any external defects or evidence of internal damage is necessary.

# IN the Know: Workplace Suicide Prevention

Between 2003 and 2008, 34 Indiana employees committed suicide while at work.



**For** most individuals, suicide is an uncomfortable subject, and understandably so. Suicide in the workplace is not something that is regularly addressed when discussing occupational safety and health. However, workplace suicides occur. Over the past six years (2003-2008) there have been a total of **34 workplace suicides in Indiana**. Although this is not a staggering number in comparison to the total number of Indiana workplace fatalities during that time frame (849), these deaths can be prevented. Taking preemptive measures can greatly reduce the likelihood that suicide will occur in your office or workplace.

Nationwide, according to the Bureau of Labor Statistics' (BLS) Census of Fatal Occupational Injuries (CFOI) report, suicides in the workplace climbed from 196 cases in 2007 to 251 cases in 2008—an increase of 28% and the highest number ever reported. Of

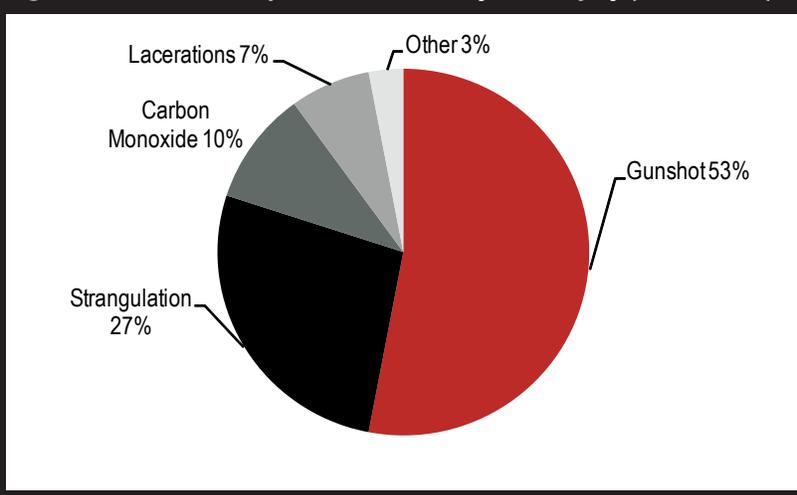
the 34 workplace suicides that occurred in Indiana in the past six years, more than half were the result of a self-inflicted gunshot wound, and more than a quarter were the result of strangulation. Only 5% of these

suicides were part of a murder/suicide. According to the **National Institute of Mental Health**, most suicide victims (90%) suffer from some sort of mental illness, or a substance-abuse problem commonly coupled with other mental disorders. As with most disorders or illnesses, there are treatments available which can potentially lessen the effects of depression and men-

tal disorders, reducing the possibility of suicide as the ultimate outcome.

From manufacturing and construction to healthcare and retail, it is important to understand that suicide in the workplace occurs across all Indiana industries. Approximately 35% of the workplace suicides

Figure 6: Indiana Occupational Suicides by Fatal Injury (2003-2008)



Source: BLS CFOI

from 2003-2008 occurred in the **agriculture** and **manufacturing** industries.

The stigma attached to depression and suicide often makes it difficult for those suffering to acknowledge that they have a problem or to seek help. Because of limited contact, an employer may not recognize an employee's distress or pick-up on warning signs of mental health issues. Although employers may not know who is suffering and when, they can break down stereotypes regarding depression and mental illness through education. By making information and help available, they can open the door for individuals to seek help.

According to [www.WorkingMinds.org](http://www.WorkingMinds.org), a workplace suicide prevention website, there are a few steps that can be taken to raise awareness about mental illness and suicide without pinpointing individual employees. They suggest employers become trained as "suicide prevention gatekeepers" and subsequently train their employees in suicide prevention. Suicide prevention training includes learning how to care for someone who is on the verge of suicide. Suicide prevention training does not expect those trained to be able to assist in the recovery process of someone contemplating suicide.

**Working Minds** also suggests making information available for suicide prevention help lines and organizations. Institutions suggested by **Working Minds** include: **Suicide Prevention Lifeline**, available online

## Workplace Suicides by the Numbers

**1,259** suicides occurred in the workplace in U.S. between 2003 and 2008.

**251** workplace suicides occurred in the U.S. in 2008 alone.

**34** workplace suicides occurred in Indiana between 2003 and 2008.

**5%** of the U.S. cases reported during this time frame were a result of a murder/suicide.

at [www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org) and **Yellow Ribbon** online at [www.yellowribbon.org](http://www.yellowribbon.org). They also highlight the need to acknowledge and become involved in awareness campaigns.

Workplace suicides are a preventable occupational occurrence. The above suggestions are only a few ways employers, supervisors and individuals in leadership positions can raise awareness of mental health issues which can lead to suicide.

## It Happened Here: Marion County, Indiana

**Background:** In Indiana between 2003 and 2008, 34 workers committed suicide at their workplace. Indiana industries with the highest number of suicides during this same six-year time frame include agriculture (6), manufacturing (6) and retail trade (5). In 2009, two workplace suicides at auto dealerships were reported to IOSHA.

**Fatal Event:** In the early morning on November 10, 2009, an employee of a car dealership found the owner of the dealership dead in his office. Papers found in the owner's office indicated financial hardship.

The coroner ruled the death a suicide by asphyxiation.

**Discussion:** Employers may consider providing employees with an Employee Assistance Program (EAP), in which employees are provided an opportunity to confidentially discuss work and family life with a professional. Additionally, employers may consider developing a mental health awareness event, featuring guest speakers presenting information helpful to employees regarding suicide prevention.

# Permit Required Confined Space:

IOSHA Compliance Safety and Health Officer, **Kyle Slade**, unveiled the confined space illusion.

**Illusionists** move from one scenario to another, careful to shield you from reality. Your mind struggles to make sense of what you see. You may even find yourself beginning to believe the illusionist really does have the ability to make something disappear. How else would you be able to explain what you saw?

In the realm of occupational safety and health, another illusion exists. When evaluating spaces, you discover a **permit-required confined space (PRCS)**. You inquire about this space and the illusionist begins. “You do have a PRCS,” he says, “but watch closely. Presto, the space is now a non-permit confined space.” “How could this be?” you ask. “Reclassification, I locked it out and the hazards are no longer there.” To the untrained eye it is an astonishing feat. The hazards disappear. The illusionist moved the space from **PRCS** to non-permit confined space—just like that.

However, to the trained eye, there are some issues the illusionist has not addressed. A confined space has limited means of entry and exit, is large enough to bodily enter and is not designed for continuous human occupancy. If the space does not meet all of these conditions, OSHA does not regulate this space under the **PRCS** standard.

So, what makes a confined space a permit-required confined space? A **PRCS** is a confined space which has one or more of the following conditions: it contains

a potential for a hazardous atmosphere, contains materials with potential for engulfment, has an internal configuration that could trap or asphyxiate an entrant (converging walls, sloping floors, etc.) or contains other serious safety or health hazards. A confined space that meets one or more of the aforementioned conditions is regulated by OSHA under the **PRCS** standard (29 CFR 1910.146).

Most employers who choose to have their own employees enter the **PRCS**, will develop and implement a written **PRCS** program. However, some employers will choose to use amended **PRCS** procedures called “alternate procedures” and “reclassification.” Alternate procedures involves controlling the hazards in a **PRCS** that only has a potential for a hazardous atmosphere, and also meets all six of the qualifying conditions for alternate procedures. Reclassification involves controlling the hazards of the **PRCS** without entering the space, resulting in a space being reclassified as a non-permit confined space. Each of these options has conditions and requirements attached to them.

Reclassification must involve a space that has no



IOSHA Compliance Safety and Health Officer, Kyle Slade.

Between October 2008 and September 2009, PRCS was the 9<sup>th</sup> most violated standard in Indiana. During this time frame, 85 citations were issued and \$173,094 in penalties were assessed.



Photo taken by Kyle Slade, IOSHA Compliance Safety and Health Officer.

# A Grand Illusion Unveiled

actual or potential hazardous atmospheres, and all of the hazards can be eliminated without entering. In order to reclassify a space, there are some terms that must be met. If you reclassify a **PRCS**, then you must document the basis for determining the elimination of all hazards through a certification that also contains the date, location of the space, and signature of the person making the determination. The reclassification certificate must be available to employees. Employees must exit the space and classify the space as a **PRCS** if the hazards arise or return.

So can a space go from **PRCS** to non-permit confined? Yes, but one must understand that the previously stated conditions for such a reclassification are often overlooked. If the hazards return, the space can no longer remain a non-permit confined space. Reintroducing the hazards means returning the space to its former condition and former classification of a **PRCS**. Reclassification is normally a temporary condition. The illusionist's success lies in the ability to make a temporary condition seem permanent. The illusionist moves through the process of **PRCS** classification, into reclassification and alludes that this space has now been permanently changed.

## “IOSHA Found It”

How would this illusion be pulled off? At a bakery I inspected, they had proofing ovens meeting the definition of a **PRCS**. Bakery employees entered ovens to recover pans that had fallen off of the conveyor. The entrance to the oven was a 20 inch by 5 foot door. They had to step down two feet to reach the oven floor. Unguarded chains and sprockets moving the conveyor were inside the oven. There were no warning signs on the proofing oven and no documentation was completed when employees entered the proofing ovens.

In this case, the illusionist said, “We locked out the

conveyor, so the proofing ovens are non-permit confined spaces.” However, for the ovens to work, they must be powered up again. Then, the illusionist contends, “No employees are exposed to the conveyor because they are locked out before they enter.”

The argument seems compelling, but ignores the requirements of the **PRCS** standard. First, the proofing ovens are **PRCS** which contain safety hazards from unguarded chains and sprockets, thus they need to have warning signs about the **PRCS**. Second, the employer could use reclassification by locking out the conveyor and documenting control of the hazards in a certification prior to each entry. However, temporarily locking out the power to the conveyor does not permanently change the classification of the space as the illusionist was stating in this case.

I have seen several cases where employers have classified a **PRCS** as a non-permit required space. There seems to be much confusion between non-permit spaces not meeting the definition of **PRCS** and those non-permit spaces temporarily controlled to remove all the hazards of that space. By ignoring the process of reclassification and emphasizing the lack of exposure, the illusionist appears to make a space something it is not.

To avoid being fooled by this sleight of hand, evaluate a confined space by asking whether the space has

any hazards as noted in the **PRCS** standard present at **any** time. If you answer yes, then the space is a **PRCS** and cannot be a non-permit space without going through alternate or reclassification procedures and then it is only a temporary condition. Armed with this information you will now

be able to distinguish between spaces that are **PRCS** and those that are not. The confined space illusion will have lost some of its appeal, but you will not fall for smoke and mirrors that leave others mystified.

## Indiana's Top Five Industries with Permit Required Confined Space Violations

SIC	Industry	Number of Violations
3300	Primary Metal Industries	27
4900	Electric, Gas and Sanitary Services	10
3000	Rubber and Miscellaneous Plastics Products	9
1700	Construction Special Trade Contractors	8
3400	Metal Products, Except Machinery and Transportation Equipment	8

Data taken from October 2008 - September 2009 IOSHA inspections.

# IOSHA Found It: Marion County

Laura Groom, IOSHA Compliance Safety and Health Officer, discusses a complaint received by IOSHA that revealed a violation that could have made employees ill.



IOSHA Compliance Safety and Health Officer, Laura Groom, reviews an employer's written HazCom program.

## Between

October 2008 and September 2009, 29 CFR 1910.1200, the Hazard Communication standard, was the most violated standard in Indiana. There were **357 citations and penalties that totaled more than \$35,101**. The standard requires employers to provide employees with effective information and training on hazardous chemicals in their work area first at the time of their initial assignment and whenever a new physical or health hazard, on which the employees have not previously been trained, is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g. flammability, carcinogenicity) or specific chemicals. Chemical specific information must always be available through labels and Material Safety Data Sheets (MSDSs).

Each inspection conducted by the Indiana Occupational Safety and Health Administration (IOSHA) requires a determination of the employer's Hazard Communication (HazCom) requirements. If it is determined that a HazCom program is required, then a review of that program occurs during the inspection process.

In 2009, I received a complaint from an auto service center located in Marion County. This service center performs common auto repairs such as brake, suspension and fuel services.

When I arrived on-site for the inspection, I determined that the employer was required to have a HazCom program. The employer did have a HazCom Program. However, the employees had not received training on the program. Additionally, employees were unaware of where to find the MSDSs for the chemicals they work with on a daily basis. These chemicals included the following: motor oil, brake fluid, Dex III, wheel bearing grease, brake wash, synthetic motor oil, concrete cleaner, aluminum cleaner, PB Blaster, brake cleaner aerosol, carb & choke cleaner, glass cleaner and multi-purpose grease.

Exposure to these chemicals could cause negative health effects such as, headaches, dizziness, nausea, vomiting, diarrhea, asphyxia and anesthetic effects leading to central nervous system depression. Chronic effects could include possible brain damage, adverse fetal development effects (in pregnant women) and degenerative damage to internal organs.

As a result of the inspection, IOSHA issued a Safety Order (citation) to the company for failure to provide its employees with effective information and training on the chemicals in their work areas. A monetary penalty was also included in the Safety Order issued to the employer.

Indiana's Top Ten Industries with HazCom Violations		
SIC	Industry	Number of Violations
5085	Industrial Supplies	31
1742	Plastering, Drywall, Acoustical and Insulation Work	17
1542	General Contractors Nonresidential buildings, Other than Buildings & Warehouses	13
1761	Roofing, Siding and Sheet Metal Work	11
1623	Water, Sewer, Pipeline and Communications and Power Line Construction	10
1741	Masonry, Stone Setting and Other Stone Work	9
3281	Cut Stone and Stone Products	9
1721	Painting and Paper Hanging	8
1771	Concrete Work	8
1521	General Contractors-Single Family Houses	8

Data taken from October 2008 - September 2009 IOSHA inspections.

Each inspection conducted by the Indiana Occupational Safety and Health Administration (IOSHA) requires a determination of the employer's Hazard Communication (HazCom) requirements. If it is determined that a HazCom program is required, then a review of that program occurs during the inspection process.

As a result of the inspection, IOSHA issued a Safety Order (citation) to the company for failure to provide its employees with effective information and training on the chemicals in their work areas. A monetary penalty was also included in the Safety Order issued to the employer.

# IOSHA Found It: Hamilton County

IOSHA Construction Safety Inspectors, **Ebony Poindexter** and **Hattie Sims**, describe an inspection in Hamilton County that could have triggered a serious incident.

**In** July 2008, the Indiana Occupational Safety and Health Administration (IOSHA) received a complaint that in Hamilton County, employees were working on a scaffold without any fall protection. I was assigned to the complaint, and Hattie Sims, Compliance Safety and Health Officer accompanied me to the site for the inspection.

The inspection covered the construction of a new building, which required employees to lay brick on the exterior of building from scaffolding. On the back of the building, there was a 25 foot high, by five foot wide and 21 foot long, fabricated frame scaffold. The scaffold was not fully planked, and it was not tied or braced to the building. It was also missing cross braces and base plates. Because the use of the scaffold was an imminent danger situation, we immediately requested that the scaffold be dismantled. The scaffold could have **easily tipped over, causing serious injuries or death to the employees working on it** and on the ground area surrounding it.

The contractor said that the employees had not been trained in scaffolding safety, and he also stated that he had not developed a safety and health program. We cited the company for violating scaffolding standards, 29 CFR 1926.451 as well as 29 CFR 1926.20(b)(1), for not having a safety and health program.

The scaffolding standard, 29 CFR 1926.451(f)(7), also requires that scaffolds be erected, moved, dis-

mantled or altered under the supervision and direction of a competent person, who is qualified in the above.

After our inspection, **the company corrected the hazards**. The contractor also developed, implemented and began enforcing a safety and health program. The project contractor received scaffolding training, and from that point forward, scaffolding on the project was only erected under the direction of a qualified person.

While a company may view this situation as “bad for business” due to monetary penalties and time consumption, serious injury or death was avoided because someone noticed a serious safety issue and notified IOSHA. This company realized their mistake, and in turn, they have taken steps to improve the quality of their safety and health culture.



IOSHA Construction Safety Inspectors, **Ebony Poindexter** and **Hattie Sims**, conduct an inspection of an Indiana workplace in 2009.

**Report safety or health complaints to Indiana OSHA by phone at (317) 232-2693.**

Indiana's Top Ten Industries with Scaffold Violations		
SIC	Industry	Number of Violations
1741	Masonry, Stone Setting and Other Stone Work	51
1742	Plastering, Drywall, Acoustical and Insulation Work	29
1542	General contractors-Nonresidential buildings, Other than Buildings & Warehouses	18
1799	Special Trade Contractors, Not Elsewhere Classified	9
1522	General Contractors-Residential Buildings, Other Than Single-Family	9
1521	General Contractors-Single-Family Houses	8
1761	Roofing, Siding and Sheet Metal Work	8
1771	Concrete Work	7
1731	Electrical Work	2
1751	Carpentry Work	2

Data taken from October 2008 - September 2009 IOSHA inspections.

# Written Work Instructions Can Save Lives

IOSHA Industrial Compliance Division Director, **Bob Kattau**, discusses why employers should provide verbal **and** written work policies, practices and procedures.

**When** we verbally communicate with others, we usually know exactly what ideas we intend to express. But, how often do we **stop**

**and ask the person we are talking to what they think we actually mean?** While we communicate what we want, our listeners often have a different understanding of what we mean.

This problem occurs when work instructions are verbally communicated, rather than written down. Writing down work instructions gives us the opportunity to re-read them at a different time, rather than trying to recall what we said from memory. Written instructions also allow us to verify that we have expressed what we intended. They allow us to share them with others, to illicit feedback and provide us with a documented procedure for future reference.

IOSHA Industrial Compliance Director **Bob Kattau** reviews an IOSHA inspection file.

Employees at a recycling company operate equipment which process scrap using an excavator and a shredder. In order to maintain the integrity of the processed material, an employee was picking foreign objects out of the pile, such as plastic and metal materials from wood scrap, while the excavator was running.

According to the employer, the employees had been informed of the need to establish eye contact with each other any time the picker entered the area around the excavator. The picker was also told that they should wear an orange safety vest, so that their location would be apparent to the excavator operator. On the surface it appears that appropriate instructions were provided to ensure safe operation at the site.

However, one day the picker was found dead in

the debris pile, not far from the side of the shredder. Reconstruction of the incident suggests that he had walked alongside the shredder and entered the scrap pile, unseen by the excavator operator. No one knows if he thought that he had gotten the attention of the excavator operator before entering the area.

Following the incident, it was revealed that there were no written work instructions which included the determination of a safe work area around the excavator or how the safe work area would be marked. There was also no determination as to who would be responsible for relocating the area as the harvester moved about the scrap pile. Furthermore, it was not determined how employees would signal each other to indicate that the excavator operator was aware of the presence of the picker before the picker entered the danger zone of the excavator.

The **absence of written and enforced work rules forced the employees to rely on others for their safety** in the work area, and it proved to be disastrous. "If it's not written, it's a rumor."

In the above example, the employer was cited using OSHA's General Duty clause for creating an unsafe work environment. The General Duty Clause is a statement within the OSH Act that requires employers to furnish employment and places of employment which are free from recognized hazards to the health and safety of their employees. The clause covers situations for which there is no specific standard. The employer was also given citations for not adequately assessing the workplace for hazards which necessitated the use of personal protective equipment (PPE), 29 CFR 1910.132(d), and for not enforcing the use of appropriate PPE including hard hats, according to 29 CFR 1910.135(a)(1).

From October 1, 2008 through September 30, 2009, IOSHA cited the General Duty Clause 75 times. Total penalties assessed were \$255,976.



Written work rules, policies and procedures help reinforce verbal instructions. (Photo by Jeanne Hedge, IOSHA Compliance Safety and Health Officer)

# Holding Employees Accountable for Actions

INSafe Health Consultant, **John Duncan**, provides guidance on strengthening your workplace safety and health program by holding everyone accountable for their actions.

**Accountability** implies that our performance is measured, and that we will be subject to consequences based on our ability to meet the obligations that have been assigned to us. Consequences, both good and bad, are necessary for accountability to be credible and effective. Consequences should be justified, correspond to the level of positive or negative behavior, and applied consistently throughout the organization. In the workplace, all employees, regardless of their position, are obligated to comply with the employer's policies, rules and standards.

To keep positive involvement in your workplace safety and health management system, an effective accountability system is necessary. This involves **establishing safety and health standards** such as company policies, procedures or rules that clearly state performance expectations. This could include mission and vision statements, written plans, job descriptions and procedures, as well as safety rules.

The Safety Pyramid below identifies the transition of a workplace incident to from recognition to situations that could potentially lead up to a mishap or an accident in the workplace. By digging deeper, you can combat potentially bad behavior, and thus eliminate workplace accidents.

Employers have an **obligation to provide a workplace free of recognized hazards** which have the potential to cause serious injury, illness or death. This also includes providing a healthful psychosocial environment that minimizes distress. A system of measurement is needed to evaluate conditions. Random observations are most common. Sometimes, peer or co-worker observations are used to monitor and correct unsafe work practices.

Likewise, **front line employees** are expected to **comply with company safety rules** and report any workplace injuries or potential hazards. Supervisors and managers play a key role in providing effective safety oversight, training (and retraining) and holding employees accountable for their actions.

**Supervisors** should also **evaluate how well they have fulfilled their own responsibilities**. Particularly, for negative consequences, honestly ask yourself, "Have I provided the employee with a safe and healthy

workplace?" "Have I provided adequate safety supervision?" "Have I provided (or has the employee received) quality safety training?" "Have I applied safety accountability fairly and consistently in the past?" If you can answer yes to all of these questions, then, most likely, you have fulfilled your obligations.

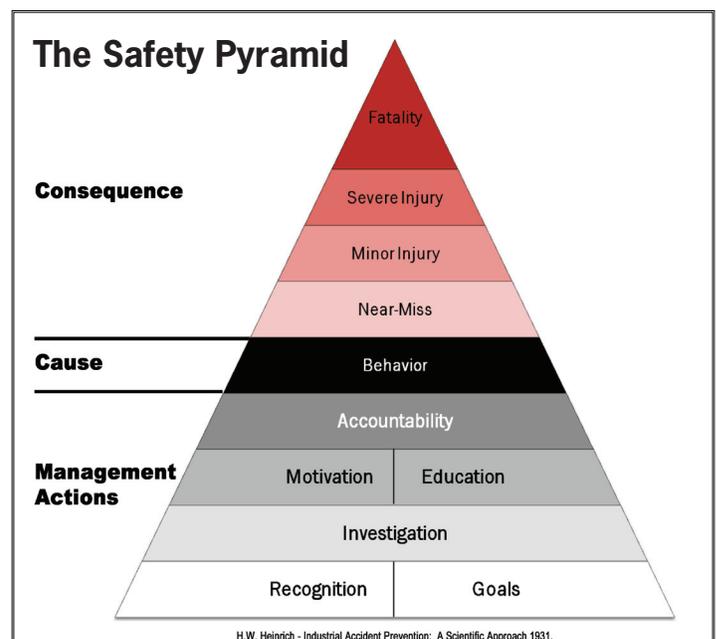
Finally, a process to evaluate the accountability system should be in place. This may be the duty of the safety coordinator or, in some cases, the safety committee. The evaluation process typically involves three distinct activities.

First, identify existing policies, plans and procedures. Next, analyze accountability policies. Finally, compare each policy, plan procedure and system process against benchmarks and best practice standards.

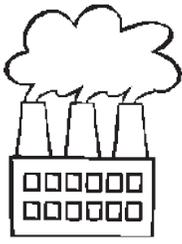
Adjustments should be made based on observed behaviors and conditions that may be missing or inadequate in your current program. To keep current, some systems need to be tweaked from time to time, including safety and health programs as well as your company's accountability system.



INSafe Health Consultant John Duncan completes a consultation report for an employer.



# Manufacturing



**The** Bureau of Labor Statistics (BLS) estimates that during 2008, the Indiana manufacturing industry employed over 538,000 workers. This is nearly one-fifth of Indiana's labor force. The manufacturing industry had the largest number of recordable injuries and illnesses, with 27% (30,800) of all injuries and illnesses. It also had the third highest number of fatalities in 2008 with 18, which more than doubled the 2007 count of seven.

Between 2003 and 2008, the manufacturing industry had 78 fatalities, an average of 13 fatalities per year. The manufacturing businesses which had five or more fatalities during this time period were **iron and steel mills** (18), **cement & concrete manufacturing** (6), **food product manufacturing** (5) and **wood product manufacturing** (5). The predominant event leading to a fatal accident was **contact with objects**, which resulted in 38% of all manufacturing fatalities.

While the manufacturing industry had the highest number of injured workers, their rate of injury (5.8 injuries per 100 workers) was lower than the rates for both the agriculture industry (7.6) and the healthcare industry (6.4). This rate (5.8) is the lowest rate re-

ported for the manufacturing industry since the BLS began data collection.

There were 2,300 illnesses reported in the manufacturing industry in 2008. The most predominant work-related illnesses were **hearing loss** (26%) and **skin disorders** (17%). The manufacturing businesses with the greatest number of illnesses were **transportation equipment manufacturing** and **food manufacturing**.

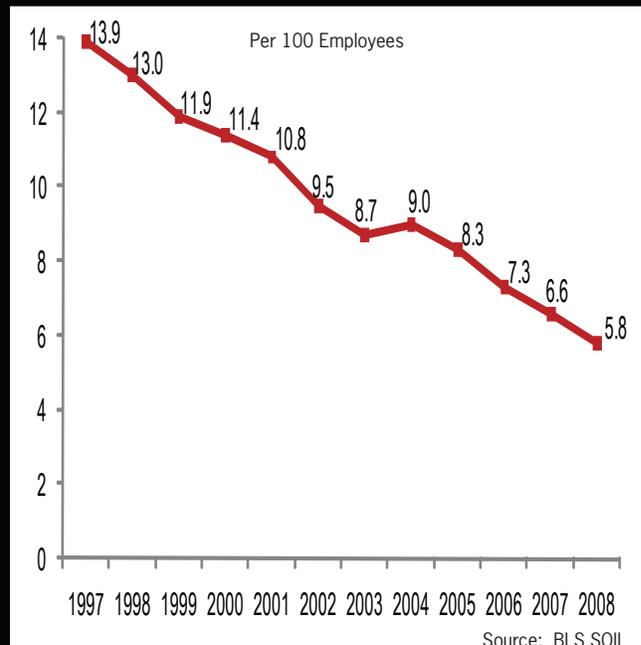
Many injuries and illnesses require the employee to take days off from work. In 2008, 5,290 manufacturing injuries required employees to take days off from work, which is a rate of 1.0 per 100 workers. These employees were predominately **male** (76%), **Caucasian** (70%), between the **ages of 45-54** (25%) and had **been at that job for five or more years** (40%). The most common events resulting in an injury with days away from work were **falls on the same level** (12%), **overexertion in lifting** (12%) and being **struck by a falling object** (8%).

The most frequent sources of all injuries were **motion or position of worker** (17%), **machinery** (11%) and **floors** (10%). The leading natures of injuries were **sprains, strains and tears** (33%), **fractures** (12%) and **bruises and contusions** (9%).

**Manufacturing Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	677	10.3	13.9	95.4	40
1998	684	9.7	13.0	88.9	24
1999	690	9.2	11.9	82.9	24
2000	686	9.0	11.4	78.3	19
2001	639	8.1	10.8	68.1	22
2002	588	7.2	9.5	87.8	24
2003	573	6.8	8.7	68.1	15
2004	572	6.6	9.0	51.4	15
2005	571	6.3	8.3	48.6	10
2006	570	6.0	7.3	42.0	13
2007	568	5.6	6.6	36.6	7
2008	538.5	5.0	5.8	30.8	18

**Indiana Manufacturing Injury and Illness Rate**



# A Look into the Iron and Steel Industries

Joseph Black, BLS Survey Coordinator with the Indiana Department of Labor's Quality Metrics & Statistics Division provides a look into iron and steel mills.

The evolution of technology in the steel industry, from its inception at the dawn of the 20<sup>th</sup> century to now, has had a great influence in our daily lives. Steel is used in many facets of everyday life, for both ordinary and extraordinary means. Steel is used to produce weapons and vehicles for the military during wartime, as well as the motor vehicles and infrastructure that we see as we drive down Interstate 69. Undoubtedly, the steel industry has been instrumental in the growth of our state and our nation.

While production efficiency and technology has improved throughout the iron and steel industry history, steel production hazards remain a significant source of non-fatal injuries. Steel mills are loud, dirty and dangerous workplaces. When you consider that this industry employed over **96,000**

Americans in 2008, it becomes apparent that attention to safety is of the utmost importance. More than 20% (19,500) of those employed in the iron and steel industry are Hoosiers workers.

Between 2003 and 2008, **62 workers were killed nationwide**. Indiana fatal occupational injuries for this industry are not publishable by the Bureau of

Labor Statistics (BLS) because in years 2005-2007, fewer than three fatalities were reported for each year.

For more information and research on the iron and steel industry, please visit [www.in.gov/dol](http://www.in.gov/dol) and click on Quality, Metrics & Statistics. From the

opened sub-navigation link, select "Analyses & Metrics."

## Number of Tons of Raw Steel vs. Annual Average Employment and TRC, U.S. Steel Industry 2004-2008

Year	U.S. Net Tons of Steel Produced <sup>1</sup>	Average Annual Employment <sup>2</sup>	Tons Produced per Employee	TRC <sup>3</sup>	Tons Produced per TRC
2004	103,889,000	92,500	1,123.1	7,000	11,841.3
2005	103,505,000	91,900	1,126.3	5,300	19,529.2
2006	105,371,000	92,600	1,137.9	5,400	19,513.1
2007	106,462,000	95,600	1,113.6	4,800	22,179.6
2008	100,101,000	96,700	1,035.2	3,900	25,666.9

<sup>1</sup>Data for net number of tons of steel produced from American Steel Institute.

<sup>2</sup>Annual average employment from U.S. DOL & Indiana Department of Workforce Development.

<sup>3</sup>Number of Total Recordable Cases from U.S. DOL, Bureau of Labor Statistics.

## It Happened Here: Lake County, Indiana



A steel industry maintenance supervisor was fatally injured after falling 80 feet. (Photo taken by John Minchuk, IOWA Compliance Safety and Health Officer)

**Background:** Falling to a lower level is the second most common fatal event. There were ten such events in Indiana in 2008.

**Fatal Event:** On June 5, 2009, in Lake County, a 54 year-old steel industry maintenance supervisor climbed a vertical ladder on top of a crane trolley 80 feet above the floor surface. The supervisor was not wearing any fall

protection. He slipped and fell to the floor below. During the fall he struck and severed his right leg on a spreader beam near the floor level. The maintenance supervisor was pronounced dead at the scene.

**Discussion:** Employers should provide fall protection, and training on the use of fall protection, to all employees who work with equipment and on elevated surfaces where fall hazards exist. In addition to providing fall protection and training, routine audits should be conducted to ensure that all employees are utilizing the available fall protection equipment.

# State and Local Government

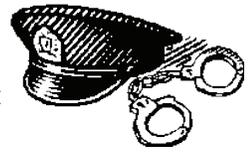
**In** Indiana, state and local government employees make up nearly 13% of the State's workforce. Occupations in the state and local government industry include elected officials, police, firefighters, healthcare workers and educators. These public sector workers are protected by the same standards as their counterparts in private industry in Indiana.

State and local government has the third highest number of injured or ill workers in Indiana. In 2008, 15,500 workers in the state and local government suffered a workplace injury or illness. The non-fatal worker injury and illness rate was 5.7, which is the same reported for this industry in 2007. Work groups in state and local governments with high worker injury and illness rates include **state hospitals** (15.0), **local water, sewage, & other systems** (12.5) and **state nursing care facilities** (11.4).

Nearly 21% of the injuries experienced by workers in public positions required one or more days away from work for the affected worker. In 2008, the average number of days away from work for workers in the state and local government is five days. This is two days fewer than the private industry's average of seven.

The most frequent injury suffered by a worker in

state and local government industry is **sprains, strains and tears**, which occurred 1,470 times (45%). The next two most common natures of injuries included **fractures** (15%) and **soreness and pain** (14%). Injured workers in state and local government were predominantly **Caucasian** (66%), **females** (52%) and **45-54 years of age** (30%).



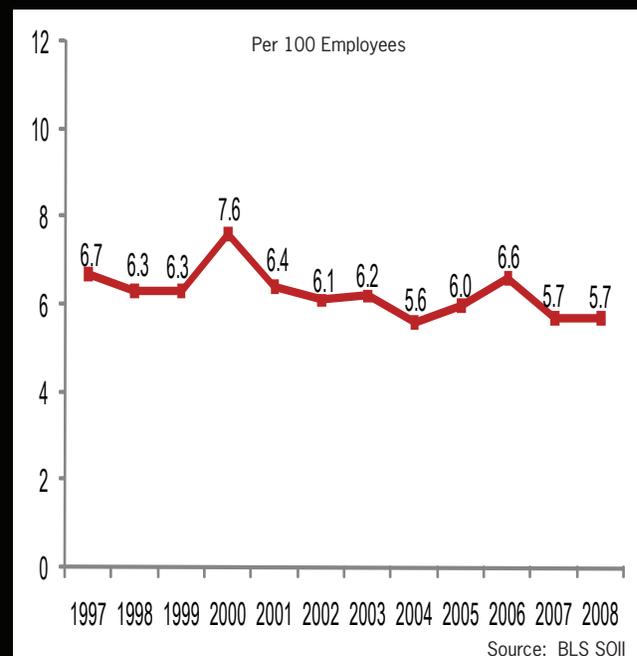
Common injury events experienced among workers in state and local government included **falls on the same level** (24%), **overexertion in lifting** (21%) and **struck against objects** (8%). Sources of injuries ranged from **floor and ground surfaces** (39%) and **worker motion or position** (12%) to **containers and machinery**, which were tied for the third most frequent source (7%).

From 2003 to 2008, 49 workers in state and local government were killed while working. Eight workers in this industry were killed in 2008 alone. Six of the eight occurred in **local government**. The highest number of fatalities for the state and local government industry reported was 16, which was reported in 2001. Public positions with high numbers of work-related fatalities are **police** (20), **fire protection** (7) and **transportation** (7).

**State and Local Government Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	N/A	Data not available	6.7	18.2	15
1998	256.5		6.3	17.1	13
1999	339.5		6.3	17.8	14
2000	338.4		7.6	21.8	13
2001	346.4		6.4	17.9	16
2002	355.6		6.1	17.3	9
2003	355.3		6.2	18.9	7
2004	360.9		5.6	16.9	9
2005	362.2		6.0	17.5	9
2006	360.3		6.6	19.7	7
2007	361.2		5.7	17.1	9
2008	368.8	6.3	5.7	15.5	8

**Indiana State and Local Government Injury and Illness Rate**



# Heart Attacks Lead in On-Duty Deaths



**They** put their own life in jeopardy to save the lives of countless citizens, homes and buildings, as well as belongings. Most individuals think when a firefighter is killed on-duty, it is due to an emergency situation. However, according to the National Institute for Occupational Safety and Health (NIOSH),

**sudden cardiac death** represents the most common cause of an on-duty firefighter fatality.

Evidence of sudden cardiac events among fire fighters has been documented traveling to and from the scene of an incident, while at the actual incident and during training events. Not all sudden cardiac events result in death.

Coronary artery disease (CAD) among firefighters is linked to a combination of personal and workplace factors. Personal factors such as age, gender, family history, diabetes, hypertension, smoking, high cholesterol, obesity and lack of exercise are well known. Less recognized, however, are the workplace factors that firefighters are exposed to which may be associated with adverse cardiovascular outcomes. These expo-

sure include **fire smoke, particulates, heat stress, noise** and **shift work**.

Fire smoke is a complex mixture of heated gases, vapors and particulate matter. Two of the most common and well known gases with cardiovascular effects are **carbon monoxide** and **hydrogen cyanide**. If inhaled, these gases disrupt the blood's transport and use of oxygen. When this occurs, heart cells die, and may ultimately trigger a cardiac event.

Also, during fire suppression, firefighters are exposed to significant amounts of **particulate matter**. Long-term exposure to elevated concentrations of particulate matter has been associated with cardiovascular death. Short-term exposure to such matter has been associated with triggering heart attacks, more often among those individuals with pre-existing heart disease.

A fire station's alarm system may sound at any time, and firefighters are expected to quickly deploy to the incident scene. When reacting to these emergencies, firefighters typically experience an increase in heart rate. Given the heavy physical demand, the elevated heart rate usually persists through the course of fire suppression. Studies have shown that physical exertion sometimes immediately precedes and triggers a heart attack.

To read more information or research conducted on sudden cardiac events among firefighters, visit [www.cdc.gov/niosh](http://www.cdc.gov/niosh).

## It Happened Here: Benton County, Indiana

**Background:** In Indiana between 2003 and 2008, there were 15 fatalities that resulted in workers falling from a non-moving vehicle.

**Fatal Event:** In Benton County on January 10, 2009, a 73 year-old state government maintenance technician was adding hydraulic fluid to a diesel payloader by kneeling on the payloader. The payloader was nearly seven feet above the concrete floor surface. The maintenance technician fell to the floor, striking his head. The maintenance technician was unconscious and transported to the hospital, where he was pronounced dead upon arrival.

The maintenance technician died as a result of multiple traumatic injuries.

**Discussion:** Employees required to work on or around elevated surfaces must be provided with written work practices as well as training that adequately addresses the hazards of working on and around those surfaces. Additionally, when working on and around elevated surfaces, it is necessary to provide safety stairs and/or workstands that allow employees the ability to safely access the work area.

# Retail Trade

**Workers** in Indiana's retail trade industry may be found in grocery stores, shopping malls and boutiques, convenience stores and home supply centers. Employing more than 328,000 Hoosiers, the industry is the third largest employment sector in Indiana. The occupational injury and illness rate for the retail industry is 4.9 (per 100 workers), which is a 4% decrease from 2007. The 2008 rate is the lowest rate for this Indiana industry on record.

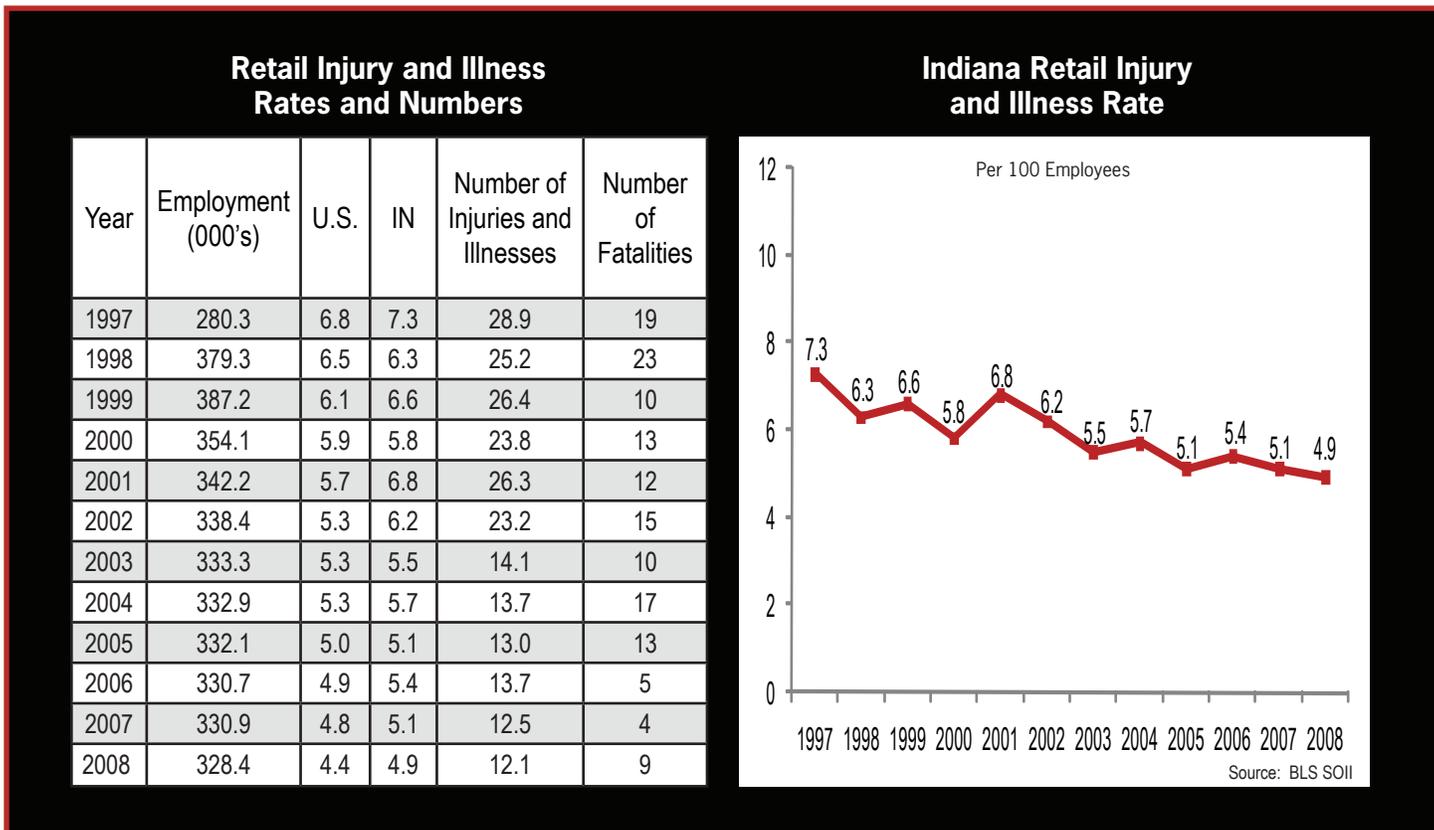
Approximately 21% (2,570) of the 12,100 injuries reported required the affected worker to miss at least one day of work. On average, injuries which resulted in days away from work were for a duration of eight days.

Workers in the retail trade industry are subjected to many occupational health and safety hazards that include contact with the public, long and irregular hours and ergonomic hazards from repetitive motions like lifting and reaching. The predominant injury suffered by workers in this industry was **sprains, strains and tears** (46%). Other frequent injuries reported by workers in the retail trade industry include **bruises**

**and contusions** (9%) and **soreness and pain** (9%).

Job-related injuries and illnesses which required days away from work in the retail industry occurred most often among **males** (51%) and among workers **35-44 years of age** (21%). Most often, the source which caused worker injuries included **floor and ground surfaces** (23%) and **containers and worker motion or position**, which were tied for second and third (15%). The top three events resulting in injury were **overexertion in lifting** (21%), **falls on the same level** (19%) and **struck by objects** (15%). Businesses in the retail industry with high worker injury and illness rates include **lawn and garden equipment supply stores** (8.1), **building material and supply dealers** (7.1) and **food and beverage stores** (6.9).

Nine retail industry workers were fatally injured while working in Indiana in 2008. The most common fatal events for workers in this industry were **falls** (3) and **transportation incidents** (3). The 2008 retail industry fatalities more than doubled the 2007 fatalities, in which four were reported. This represents 14 fewer than the industry high of 23, which was reported in 1998. While not the case in 2008, historically, assaults and violent acts have been a leading fatal event.



# Assaults and Violence: Retail Workers at Risk

**Do** your employees exchange money with the public? Is your place of employment open during the evening or late-night hours? Is your workplace located in a high crime area? If you answered “yes” to any of the above questions, your workplace, and more importantly, your employees, may be at risk for workplace violence or assaults.



Workplace violence, whether it is narrowly defined to include only violent criminal acts, or broadly defined to include verbal threats, has long affected workers in the retail industry. Limited existing data suggests that **late-night retail establishments**, such as **convenience stores**, **liquor stores** and **gasoline stations**, experience relatively high homicide and assault rates.

In 2008, assaults and violent acts claimed 794 lives and represented over 15% of the total 5,071 workplace fatalities in the United States. Homicides represented the majority of these violent acts, claiming 517 lives in 2008, equaling 10% of all workplace fatalities. More than 22% of those homicides (a total of 116) occurred in the following retail establishments: **gasoline stations** (27), **convenience stores** (25) and **liquor stores** (5). While homicides have shown a marked overall decline since 1994, when they peaked at 1,080, they were the third leading cause of work-related deaths in 2008, and remain a serious risk today for late-night retail workers.

In addition to the retail industry, **assaults** and **violent acts** are also prevalent in the **accommodation and food services industry**. Nationally, in 2008, 81 workers in the accommodation and food services industry were victims of homicide.

This accounts for about 55% of all fatal workplace injuries in this industry. The majority of these homicides occurred in **alcohol-drinking establishments** (29) and **full-service dining establishments** (22), while a large number also occurred in **limited-service dining establishments** (18) and **hotels** (8).

Employers in these high risk industries should consider developing Workplace Violence Prevention Programs. These programs assist in the identification of potential workplace-violence threats. Elements of a workplace violence prevention program include a clearly written company policy regarding workplace violence, as well as establishing a threat and hazard assessment team. Prevention programs should also contain training and education aspects (e.g. yearly training seminars, educational handouts, etc.) as well as established methods for incident reporting, investigation, follow-up evaluation and recordkeeping.

For more information and assistance with establishing a Workplace Violence Prevention Program, please visit [www.in.gov/dol/](http://www.in.gov/dol/), click on “INSafe” from the left navigation link and then select, OSHA Educational Materials & Resources from the drop-down menu.

## It Happened Here: Marion County, Indiana

**Background:** Between 2003 and 2008, in Indiana, four convenience store clerks were fatally shot during a robbery. Nationally in 2008, 25 convenience store clerks were fatally shot while working.

**Fatal Event:** On November 21, 2009, a 62 year-old female retail convenience store clerk was robbed by two suspects at gunpoint. During the robbery, one of the suspects shot the convenience store clerk in the head. Another customer showed up while the robbery was in progress and pursued the robbers on foot until losing sight of them.

The convenience store clerk died of fatal gunshot wounds to the head.

**Discussion:** To protect employees, employers should provide training to employees so they understand unacceptable conduct, what to do if they witness or are subject to workplace violence and how to protect themselves. Businesses open to the public may also consider providing drop safes to limit the amount of cash on hand to reduce the likelihood of a potential robbery. Additionally, employers may consider introducing the “buddy system,” where multiple employees work shifts.

# Professional and Business Services

A broad sector, the professional and business services industry includes legal, accounting, engineering, computer, veterinary and photographic services. It also includes management, administration, facilities support, waste management and remediation services. The industry employs 292,400 employees in Indiana.

The Indiana non-fatal occupational injury and illness rate for this industry is 2.4, which is 26% above the National professional and business service rate of 1.9 (per 100 workers). Most Indiana work areas are in low-risk office settings.

The Bureau of Labor Statistics redefined the industry characteristics in 2003. Since 2003, the injury and illness rate has fluctuated between 2.4 and 3.0. Similarly, the number of fatalities shows no definitive trend with a low of seven in 2004 and 2008 and a high of 13 in 2006. On average, 4,800 employees are injured or made ill each year in the professional and business service industry.

In 2008, workers in this industry experienced 1,400 fewer injuries and illnesses than 2007. Nearly 30% of the injuries experienced by workers in this industry required a worker to miss at least one day of work. The average duration of work missed by injured or ill workers was three days.

Over 40% of the injuries incurred by workers, which resulted in days away from work were **sprains, strains and tears** (41%). **Punctures, excluding bites** (21%) and **fractures** (7%) were also injuries suffered by workers in the professional and business services industry. The leading injury event was **assaults by animals** (21%), most often a domestic cat, heavily influenced by veterinary clinics. **Overexertion in lifting** (19%) and **falls on the same level** (15%) were the next leading injury events in this industry in 2008. The top three businesses in this industry that experienced occupational injuries and illnesses were **veterinary services** (9.5), **solid waste collection** (7.7) and **landscaping services** (5.9).

By a narrow margin, **females** (51%) experienced the majority of injuries in industry in 2008. The age of the majority of injured workers in 2008 was most often **35-44 years old** (31%).

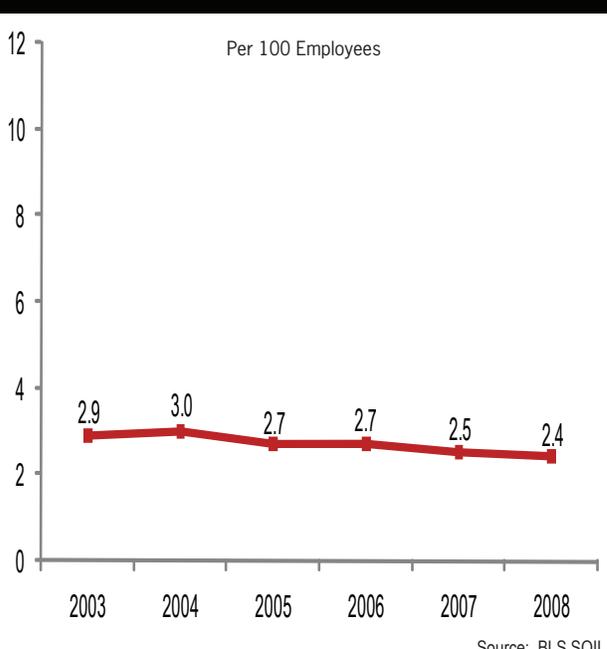
In Indiana in 2008, there were seven fatalities in this industry, four fewer than 2007. The fatalities that occurred in 2008 included three homicides.



**Professional and Business Services Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	The Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending the data before that time.				
1998					
1999					
2000					
2001					
2002					
2003	245.6	2.5	2.9	4.6	11
2004	266.3	2.4	3.0	4.3	7
2005	272.4	2.4	2.7	4.4	12
2006	279.3	2.1	2.7	4.9	13
2007	288.7	2.1	2.5	6.1	11
2008	292.4	1.9	2.4	4.7	7

**Indiana Professional and Business Services Injury and Illness Rate**



# “It Happened to Our Employee”

**An Employer’s Perspective:** “This tragic circumstance is not a moment or event that you are prepared for,” wrote **John Brand**, President of Butler, Fairman & Seufert, Inc.

I will never forget the searing emotion resulting from the phone call I received on October 5, 2009. A BF&S employee called to advise me that Andrew Landes, our coworker and friend, had been struck by a vehicle while working on a roadway in north-east Indiana. Andrew was fatally injured while completing aerial survey control targets on the roadway. This tragic circumstance is not a moment or event that you are prepared for.

The loss of Andrew is **not a safety statistic**, but rather a life that ended much too soon. Andrew was a wonderful young man, who had been with BF&S since January 2007. As a 22 year-old, he had most of his life ahead of him. Andrew was a passionate Packers fan who was very close to his parents, Dean and Monica Landes, and siblings, Logan and Taylor. Andrew’s father, Dean, is also an employee of BF&S. Daily, we are reminded that a father has lost a son.

Following the accident, our **first priority was to support the Landes’ family** and coworkers who were most directly impacted by the incident. Support involves many different things and will be a long-term endeavor.

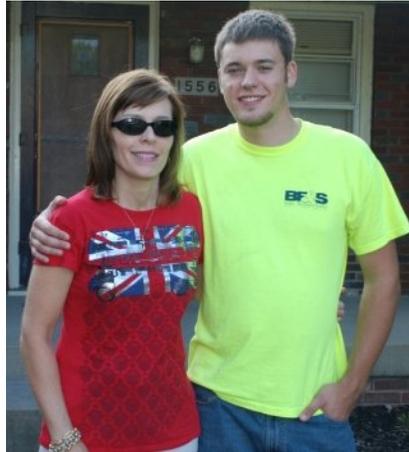
We received much support from IOSHA’s personnel,

who were particularly sensitive to Andrew’s family members and BF&S employees. IOSHA was helpful in evaluating company safety practices, as it related to the accident, and offering guidance for our safety program. As a component of our 2010 Business Plan, BF&S will complete an initiative related to increasing awareness and effectiveness of our safety program. No lost time due to workplace accident or injury is the goal that we are working to attain.

**Employees, management and IOSHA** all have a part in workplace safety. Employees need to understand the importance of workplace safety and not allow themselves to be put in unsafe situations. Employers

must emphasize and mandate safety compliance. IOSHA can be helpful in assisting companies in implementing the best practices related to safety.

It is the hope of the Landes’ family and BF&S that this tragic event will bring awareness to dangers and the precautions that must be taken against them, when working adjacent to or on a roadway. Let’s all keep in mind what is at stake if a workplace accident occurs. The loss of a life is too high of a price to pay.



Andrew Landes pictured with his mother, Monica. (Submitted Photo)

## It Happened Here: DeKalb County, Indiana

**Background:** Between 2003 and 2008, 17 workers were struck by a vehicle or mobile equipment in the roadway in Indiana. Nationally, 107 workers were struck by a vehicle in the roadway in 2008 alone.

**Fatal Event:** On October 5, 2009, in DeKalb County, a 22 year-old technician and coworker were measuring the roadway for an airport planning project in the southbound lane of a state highway. Both employees were wearing traffic vests and had engaged the work truck’s strobe lights.

The technician was struck by a motor vehicle. The employee died instantly as a result of blunt force trauma to the head.

**Discussion:** In addition to personal protective equipment (PPE), such as traffic vests, it is also important to advise motorists of workers in the roadway through the use of vehicle strobe lights, warning signs and road cones. These warning signs indicate hazards ahead on the roadway that may not be readily apparent to motorists.

# Construction

**From** brick masons and pipe layers, to electricians and engineers, the construction industry is composed of a wide array of professions. Workers in this industry are responsible for the construction and maintenance of Indiana's infrastructure, commercial and public buildings as well as Hoosier homes. There were more than 151,000 workers employed in this industry in Indiana in 2008.



construction industry were most often experienced by **Caucasian** (87%) **males** (99%) between the **ages of 35-44** (37%).

The most common injury events associated with days away from work in the construction industry included **falls to a lower level** (24%), **falls on the same level** (13%) and **bodily reaction, including bending and reaching** (12%). Most often, these types of injury events led to **sprains, strains and tears** (33%), **fractures** (18%) and **soreness and pain** (12%). The construction sub-industries with the highest injury and illness rates in Indiana include **roofing contractors** (7.9), **poured concrete foundation and structure contractors** (6.5) and **building finishing contractors** (5.4).

The 2008 Indiana non-fatal injury and illness rate for the construction industry was reported at 4.6 per 100 workers. This rate is 19% lower than the 2007 rate, the greatest occupational injury and illness rate drop on record for Indiana's construction industry. This is also the first time the construction industry has experienced a rate decrease since 2004.

There were 19 fatalities in the construction industry in 2008. This represents 13 fewer than the recent industry high of 32, which was reported in 1996, and again in 2000. All fatal injuries reported in this industry in 2008 occurred among males. The predominant causes of death among workers in the construction industry were **contact with objects** (7) and **falls** (5).

Workers often experience injuries which are severe enough to require them to spend time away from work. Collectively, 2,410 injuries happened in 2008 to construction workers which required the worker to spend time away from work. On average, injured construction workers spent **17 days away from work**. This is the highest average number of days away from work experienced by any major industry in Indiana. Injuries which required days away from work in the

Visit [www.in.gov/dol/2366.htm](http://www.in.gov/dol/2366.htm) for more information on construction industry injury and illness characteristics.

**Construction Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	N/A	9.5	11.3	14.7	29
1998	142.9	8.8	10.0	13.5	24
1999	146.3	8.6	9.4	12.8	30
2000	144.1	8.3	7.7	10.7	32
2001	144.6	7.9	7.6	10.2	22
2002	141.4	7.1	6.9	9.0	25
2003	139.3	6.8	6.5	8.5	15
2004	143.3	6.4	6.0	7.9	23
2005	144.6	6.3	5.6	7.5	29
2006	146.6	5.9	5.6	7.6	27
2007	153.1	5.4	5.7	7.7	21
2008	151.6	4.7	4.6	6.3	19

**Indiana Construction Injury and Illness Rate**



# Trenching and Excavation = Dangerous Work

**OSHA** recognizes trenching and excavation as one of the most dangerous construction occupations. Excavations are hazardous because they are inherently **unstable** and are **restricted spaces**, presenting risks of **oxygen depletion, toxic fumes** and **water accumulation**. **Electrocution** or **explosions** may also occur when workers contact underground utilities.

Pre-job assessment and planning is critical to minimize on-the-job risks associated with this type of work. Employee safety and health should not be improvised, nor compromised as the work progresses. A common error in trenching is not physically locating what is beneath the surface. Locating companies do not show the exact locations of underground and buried items. It is the responsibility of the “digger” to physically locate any buried material. Quite often, the topology of the soil has changed since the original placement of underground utilities, which include sewers, water lines, gas lines and power lines (see 1926.651(b)).

Another misconception is that if a trench is only a few feet deep no protection for employees is necessary. The construction safety standard, 1926.652(a)(1)(ii), requires a protective system from cave-ins except when “Excavations are less than five feet (1.52m) in depth and the examination of the ground by a competent person provides no indication of a potential cave-in.” Most do not read past the five feet deep rule. All trenches are required to be examined by a competent person prior to allowing an employee to enter. Employ-

ee entrance may also be restricted if there is a change in weather, as this could potentially affect the condition of the soil.

Employers and employees who do not perform regular inspections of trenches and excavations run the risk of fostering hazardous situations. Inspections should occur before construction begins, daily before each shift and as needed throughout the shift. Trenches should be examined for possible cave-ins, hazardous atmospheres, failure of protective systems and other unsafe conditions. Inspections must be performed by a competent person who has been trained in soil analysis, use of protective system and has knowledge of the OSHA requirements as well as the authority to immediately eliminate hazards.



Indiana rescue workers attempt to recover a victim of a trench collapse. The worker died as a result of traumatic asphyxiation. (Photo taken by John Minchuk, IOSHA Compliance Safety and Health Officer)

## It Happened Here: Wabash County, Indiana

**Background:** In a five-year period of time, between 2004 and 2008, six Hoosier workers have been killed in a trench environment.

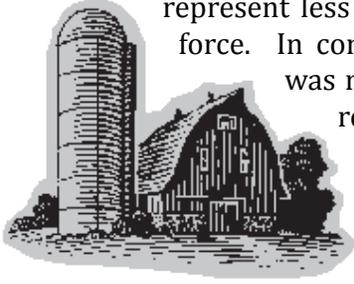
**Fatal Event:** In Wabash County, on January 27, 2009, a 51 year-old construction laborer was working in an excavation approximately six feet wide by eight feet long and five feet deep. The employee was removing an old water line and cut approximately seven inches of the pipe. Previously, employees of another firm installed a hydra-stop to prevent the flow of water through the pipe. The laborer used a chipper hammer to free

the remaining pipe. When the employee struck the pipe, a section of the pipe caught and pinned his wrist. As the construction laborer and fellow worker worked to free his wrist, a pipe ruptured and water began filling the excavation. Efforts to free the trapped construction laborer’s wrist were unsuccessful. The construction laborer drowned.

**Discussion:** In this case, the joints of pipe were not restrained in a manner that may have prevented them from moving from the potential energy of the water pressure behind the hydra-stop.

# Agriculture

**Indiana** is known as an agriculture state, even though farmers represent less than 1% of the Hoosier workforce. In contrast, the agriculture industry was responsible for 22 (17%) work-related fatalities in 2008—the highest of any industry. In Indiana, in 2008, one in every six workplace fatalities was agriculture-related.



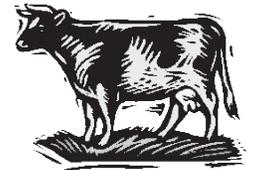
Between 2003 and 2008, 134 workers were killed in Indiana's agriculture industry. An analysis of this time period allows insight into the characteristics of Indiana agriculture fatalities. The majority of fatalities occurred on crop farms (80%), with only 14% occurring on animal farms. A review of the dates of fatalities on crop farms show that **84% of the fatalities occur between April and October**, correlating to the growing season.

In 2008, the top fatal injury events were **transportation related** (53%), **contact with objects** (26%), **assaults** (10%) and **falls** (7%). The source of most fatalities is a **vehicle** (56%), usually a tractor. A frequent fatal event on farms is an **overturned tractor** (21%) resulting in death by asphyxiation or multiple

traumatic injuries. The **assault** category includes **animal attacks** as well as **suicides** that occur on the work premise.

Not only did agriculture have the highest number of fatalities, it had the highest rate of injuries and illnesses (7.6). However, the actual number of injuries was comparatively low with 600, of which 120 (20%) resulted in days away from work. The average amount of time for a worker in this sector to be away from work was nine days—two days longer than the State average of seven. The 2008 rate for this industry is lower than the 2007 rate of 8.4. The lowest rate this industry has experienced was 5.1, which was recorded in 2005.

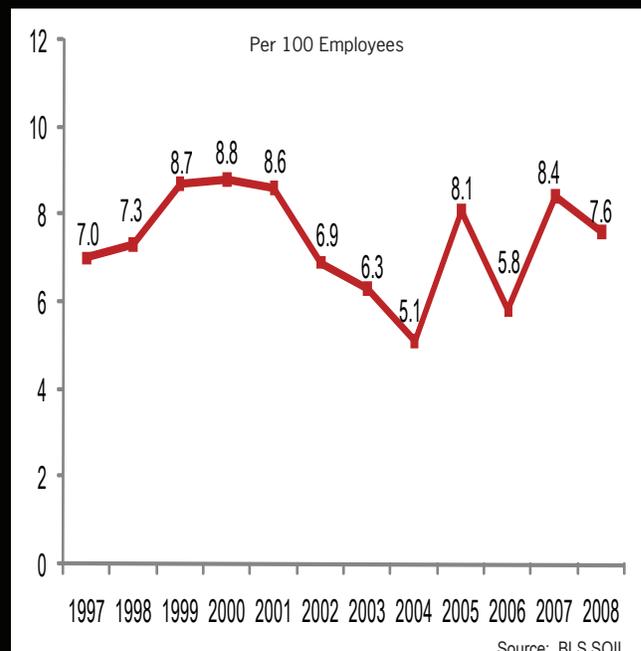
The most common sources of injury resulting in time away from work included **floors and ground surfaces** (33%), **worker motion or position** (17%) and **machinery** (17%). Injuries suffered by these workers included **sprains, strains and tears, cuts, lacerations and punctures** and **soreness and pain**—all equally distributed among one another.



**Agriculture, Forestry and Fishing Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	N/A	7.9	7.0	Data not available	17
1998	9.0	7.6	7.3		22
1999	11.4	7.0	8.7		20
2000	11.5	6.8	8.8		35
2001	11.5	7.0	8.6		29
2002	11.4	6.4	6.9		27
2003	11.2	5.8	6.3	500	24
2004	9.0	6.0	5.1	400	22
2005	8.8	5.7	8.1	600	30
2006	8.8	6.0	5.8	500	12
2007	9.2	5.4	8.4	700	22
2008	9.3	5.3	7.6	600	22

**Indiana Agriculture, Forestry and Fishing Injury and Illness Rate**



# Reaching Out and Educating Youth

**Tom Boller** of Monsanto Company communicates how Monsanto's Windfall, Indiana Soybean Production facility, an Indiana VPP site, is reaching out to Tipton County youth.

**Farm Safety 4 Just Kids (FS4JK)** is a national not-for-profit organization founded in the State of Iowa by Marilyn Adams. The **Tipton County, Indiana Chapter of FS4JK** was founded in March 2004 by the employees of Monsanto's Soybean Production facility in Windfall, Indiana. Today, the chapter has grown to include other organizations such as Cargill, Co-Alliance, Farmer's Mutual Insurance and the Purdue Extension Office.

Since its inception, the **Tipton County FS4JK Chapter** has done a great deal within the community. In February 2008, the chapter received a national award for their efforts to reach out to more than 10,000 area children and adults in 2007. This is considered quite an accomplishment for such a small chapter.

The chapter hosts several educational and awareness programs throughout the year including booths at 4-H fairs and school farm days. The educational programs include: chemical awareness, animals, grain, fire, machine and electrical safety and other valuable

programs. The chapter's most popular program is the seat belt safety program, "**Buckle Up or Eat Glass.**"

Each spring, on a select day, chapter members arrive at the county's schools prior to student arrival. As students arrive, chapter members conduct surprise seat belt checks. Prizes are given to everyone wearing his or her seat belt. Those not wearing seat belts receive literature about the importance of seat belt safety.

A formal seat belt and driving safety program is also held in the school's auditorium. Local police, EMS and other emergency personnel provide assistance with the presentation. Monsanto also donates interactive, computer-based, driver safety training to Tipton County schools. "**Buckle Up or Eat Glass**" reaches about 1,200 students in Tipton County each year. The percentage of seat belt use during the surprise checks has improved from 78% in 2007; to 97% in spring 2009. Monsanto employees feel the campaign has had much to do with the improvement.

## It Happened Here: Knox County, Indiana

**Background:** In Indiana between 2003 and 2008, six fatalities resulted from contact with an auger. In the United States in 2008 alone, 38 agriculture workers were fatally injured when they were caught in running machinery.

**Fatal Event:** On July 27, 2009, at a grain handling site in Knox County, a 73 year-old male farm worker was sweeping the floor inside a grain bin. On the floor of the grain bin, a gate/door (approximately two square feet in size) was left uncovered. The worker accidentally stepped into the open gate/door, and his right leg was entrapped in the bin auger mechanism. About two hours later, the worker was found with his leg still trapped.

A co-worker said that as part of his duties he would close the gate/door and turn off the drag line conveyor. The shut off was located outside of the bin. This co-worker turned off the conveyor

approximately five minutes after the victim entered the bin. Within these five minutes, the victim's leg became trapped. The scene investigation revealed a large amount of blood present beneath the auger mechanism. The cause of death was exsanguination due to traumatic leg injury.

**Discussion:** To ensure safety, employees entering grain bins should only do such when another person is outside the bin. Additionally, employees should not enter bins unless the power has been shut off and locked out.



Above: Actual Poster displayed on the grain bin in which the worker was fatally injured. (Photo taken by Erik Shell, IOSHA Compliance Safety and Health Officer)

# Healthcare and Social Assistance

**When** we are sick or injured, we rely on healthcare workers to take care of us. The healthcare and social assistance industry employed 332,600 Hoosiers in 2008.

The sub-industries in the healthcare industry are arranged on a continuum starting with those establishments that exclusively provide medical care (physicians, dentists, chiropractors and therapists), continuing with those responsible for providing healthcare and social assistance (medical centers, laboratories, hospitals and nursing care facilities), and finishing with those that provide only social assistance (community food services, temporary shelters and child care centers).

The healthcare and social assistance industry in Indiana had the second highest number and rate of non-fatal workplace injuries and illnesses in 2008. The Indiana 2008 occupational injury and illness rate for the healthcare industry is 6.9 (per 100 workers), which is 23% above the United States healthcare and social assistance industry rate of 5.6.

About 18% of all injuries experienced by healthcare and social assistance workers required that the worker spend one or more days away from work. The

average number of days spent away from work is five. An overwhelming number of injuries in the healthcare

and social assistance industry occur among **females** (85%). The most frequent nature of injury suffered by workers in the healthcare and social assistance industry is **sprains, strains and tears** (52%). Other common injuries include **fractures** (11%) and **bruises and contusions** (10%).

A substantial number of injury sources include **healthcare patients** (38%), **floor and ground surfaces** (24%) and **worker motion or position** (8%).

Specific healthcare businesses with high worker injury and illness rates include **nursing and residential care facilities** (10.4), **hospitals** (8.4) and **social assistance** (4.7). The predominant injury events causing injury included **falls on the same level** (24%), **overexertion in lifting** (21%) and **struck against object** (8%).

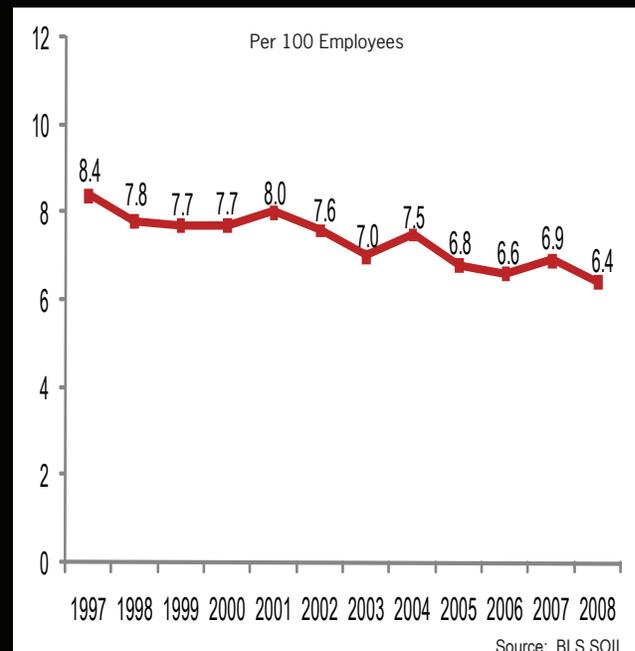
Although somewhat rare, fatalities occur in this industry. In 2008, there were five occupational-related fatalities in this industry. Three of the five fatalities occurred in an **air ambulance crash**.



**Healthcare Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	224.1	8.0	8.4	18.0	3
1998	296.6	7.4	7.8	16.5	3
1999	307.2	7.1	7.7	16.6	-
2000	313.2	7.1	7.7	17.5	-
2001	313.8	6.9	8.0	18.1	-
2002	328.2	7.0	7.6	17.3	-
2003	329.6	6.5	7.0	16.5	-
2004	303.2	6.2	7.5	18.6	3
2005	308.4	5.9	6.8	16.1	5
2006	316.0	5.8	6.6	16.5	-
2007	316.0	5.8	6.6	17.1	-
2008	332.6	5.4	6.4	16.0	5

**Indiana Healthcare Injury and Illness Rate**



# Mining

**Southwest** Indiana is home to the state's coal mining community. The Indiana coal mining industry provides jobs for Hoosiers and energy resources for state and national consumption. There are approximately 6,400 workers in the mining industry in Indiana. In Indiana in 2008, coal mine workers mined more than 12 million tons of clean coal.

The 2008 non-fatal work-related injury and illness rate for Indiana's mining industry was 3.8, which is 31% above the national rate for this industry (2.9). Specifically, the coal mining injury and illness rate in 2008 in Indiana was 3.1 per 100 workers. Injured workers in this industry were most likely to suffer from **sprains, strains and tears** (38%), **fractures** (23%) and **bruises and contusions** (15%). About 43% of injuries suffered by workers in this industry required the injured worker to spend at least one day away from work. Indiana's mining industry had the second highest average amount of time spent away from work for more severe injuries or illnesses. In 2008, the average days away from work in this industry was 11 days; four more days than the state's average of seven.

All of the injuries suffered by workers in this indus-

try occurred among **males**. The predominant age range of an injured worker in Indiana's mining industry is **35-44** (31%). The most common injury-causing event in this industry is tied between **struck by object** (23%)

and **overexertion** (23%). The next most frequent injury event is also tied between **falls on the same level** (15%) and **transportation incidents** (15%).

Nationally, mining sub-industries with high non-fatal occupational injury and illness rates include **bituminous coal underground mining** (6.5), **anthracite mining** (6.2) and **uranium-radium-vanadium ore mining** (5.6).

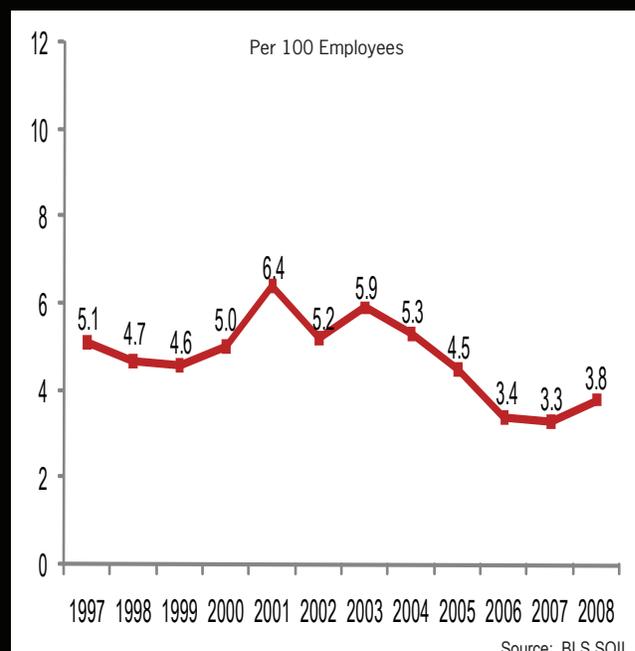


Above: On December 19, 2009, a "mock fire" served as a mine emergency disaster drill that took place at Sunrise Coal Company's Carlisle Mine located in Sullivan County. Indiana underground coal mines remained fatality-free in 2009. (Submitted Photo)

**Mining Injury and Illness Rates and Numbers**

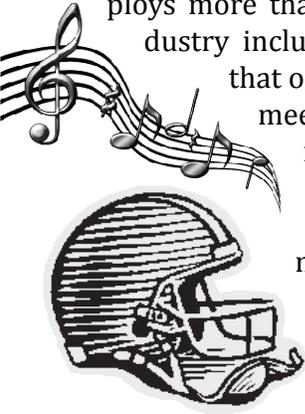
Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	5.8	5.7	5.1	400	-
1998	7.8	4.7	4.7	400	-
1999	7.1	4.1	4.6	300	3
2000	7.1	4.6	5.0	300	-
2001	6.9	3.9	6.4	500	-
2002	6.8	4.0	5.2	400	-
2003	6.7	3.1	5.9	400	6 between 2003 and 2008
2004	6.7	3.6	5.3	400	
2005	6.5	3.5	4.5	300	
2006	6.5	3.5	3.4	200	
2007	6.6	3.1	3.3	200	
2008	6.4	2.9	3.8	300	

**Indiana Mining Injury and Illness Rate**



# Arts, Entertainment and Recreation

**Indiana's** arts, entertainment and recreation industry employs more than 30,000 Hoosier workers. The industry includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment and recreational interests. This includes performing arts, spectator sports, museums, historical sites, amusement parks, casinos, golf courses and fitness centers.



Between 2003 and 2008, 16 workers were killed in this industry, with six of the fatalities occurring in 2008. A vehicle of some type was involved in 11 of these fatal events. The most common fatal events in this industry were **racing vehicle accidents**, which resulted in four fatalities, and incidents where grounds keepers were killed in **lawnmower accidents**, which resulted in three fatalities. In 2008, there were 1,800 recordable injuries for this Indiana sector, with 60% of injuries and illnesses in the **amusement, gambling and recreational industries**. The corresponding non-fatal injury and illness rate is 6.3 per 100 workers, which is above the nation-

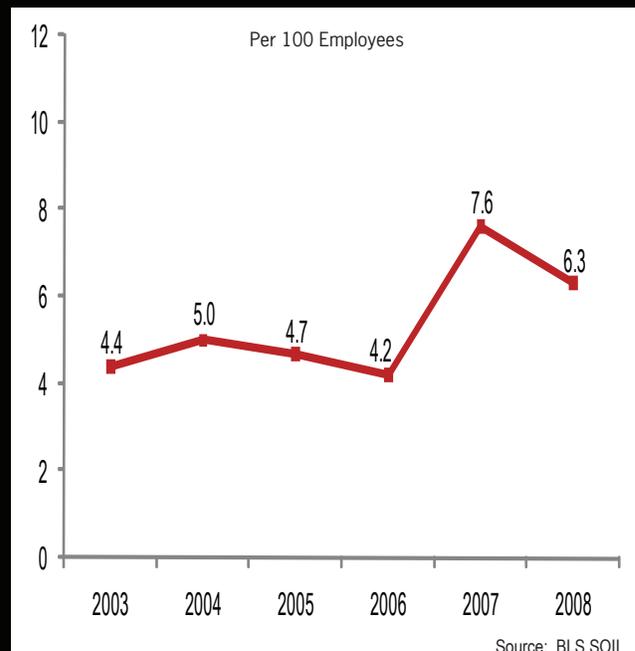
al average of 5.1 for this industry. The number of injuries and illnesses experienced by Hoosier workers in this industry fell by 600 from 2007 to 2008. Most often, work-related injuries which required the worker to spend days away from work were experienced by **males (63%), 16-19 years of age (30%)**. On average, these injured workers were away from work for two days, which is five days fewer than the Indiana average of seven. Injuries occurred most often as a result of an exposure to a **harmful substance (33%)**. The most common nature of injury to workers in the arts, entertainment and recreation industry in 2008 was **sprains, strains and tears (35%)**. **Cuts, lacerations and punctures** were the second most frequent injury type, followed by **bruises and contusions and fractures**, which were tied (8%) for third. The next two most common events resulting in injury in 2008 were **falls on the same level (18%)** and **overexertion (13%)**.

There were six workers fatally injured in the arts, entertainment and recreation industry in 2008; four of which were attributed to a **transportation-related** event. Half of the occupational fatalities in this industry occurred in the sub-industry of **spectator sports**.

**Arts, Entertainment and Recreation Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	The Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending the data before that time.				
1998					
1999					
2000					
2001					
2002					
2003	43.2	5.6	4.4	1.3	16 between 2003 and 2008
2004	44.3	5.6	5.0	1.3	
2005	43.8	5.8	4.7	1.4	
2006	43.3	5.3	4.2	1.2	
2007	43.7	5.3	7.6	2.4	
2008	43.3	5.1	6.3	1.8	

**Indiana Arts, Entertainment and Recreation Injury and Illness Rate**



# Accommodation and Food Services

## Providing



the state with services that include lodging, meal preparation or beverages for immediate consumption, the accommodation and food services industry in Indiana employs more than 240,000 workers.

The occupational injury and illness rate for this industry in 2008 was 4.1 per 100 workers. This is the same rate that was reported in 2007 and 23% below the 2003 injury and illness rate for the accommodation and food service industry.

Sub-industries in the accommodation and food services sector with high non-fatal occupational injury and illness rates include **special food services** (9.7), **recreational and vacation camps**, excluding campgrounds (6.9) and **hotels and motels** (6.0). Injuries and illnesses resulting in days away from work in

the accommodation and food services industry were most often experienced by **Caucasian** (41%) **females** (59%), ages **35-44 years old**. The average days away from work for employees that suffered a work-related injury or illness in this industry was two days in 2008.

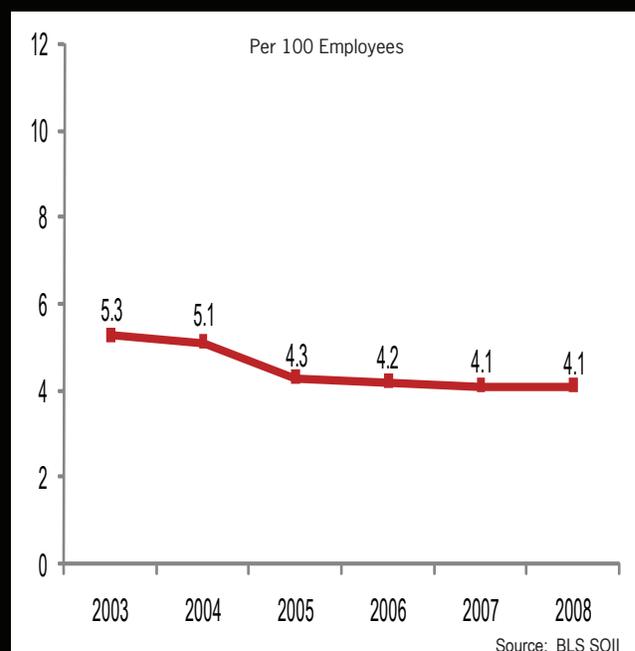
As with all Indiana major industries, the most common injury experienced by workers in this industry was **sprains, strains and tears** (31%). **Heat burns** (15%) were second, and likely because of exposure to food preparation equipment. The third most common injury experienced by workers in this industry in 2008 was **bruises and contusions** (10%). Workers were most often afflicted by injuries resulting from **falls on the same level** (26%), which was followed by **over-exertion in lifting** (19%) and **exposure to harmful substances** (18%). **Floors and ground surfaces** (25%) were the primary source of injury resulting in days away from work for the affected employee. This was followed by **containers** (13%) and **parts and materials** (11%).

From 2003-2008, 19 Hoosier workers in the accommodation and food services industry were killed while working. Thirteen (68%) fatalities during this time frame were **homicides**.

**Accommodation and Food Services Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	The Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending the data before that time.				
1998					
1999					
2000					
2001					
2002					
2003	228.7	4.8	5.3	7.4	5
2004	230.0	4.4	5.1	7.4	0
2005	232.9	4.3	4.3	6.1	5
2006	236.1	4.5	4.2	6.3	3
2007	242.1	4.4	4.1	6.1	3
2008	244.3	4.1	4.1	5.8	3

**Indiana Accommodation and Food Services Injury and Illness Rate**



# Transportation and Warehousing

**Indiana's** transportation and warehousing industry includes workplaces engaged in the transportation of passengers and freight via air, water, rail and ground. It also involves the warehousing and storage of goods, sightseeing transportation and other various support-related activities. In Indiana in 2008, this industry employed more than 108,000 Hoosier workers.



The transportation and warehousing industry was in the top three leading workplace fatalities in Indiana for more than a decade. However, this is not the case for 2008. Occupational fatalities in the transportation and warehousing industry went from 31 reported in 2007, to 16 reported in 2008. The 2008 report is the fewest fatalities ever reported for this industry.

More than 60% of fatalities that occurred in this industry were a result of a **highway incident**. Other fatalities involved drivers **interaction with freight**, which included being **struck by the load** or **exposure to harmful chemicals**. Workers in this industry were also killed from falling off of a rig.

**Falls on the same level** (27%) was the predomi-

nant injury causing event experienced by workers in this industry which resulted in days away from work. **Overexertion in lifting** (14%) and **transportation accidents** (9%) were the next two most common injury causing events experienced by workers in this industry in 2008.

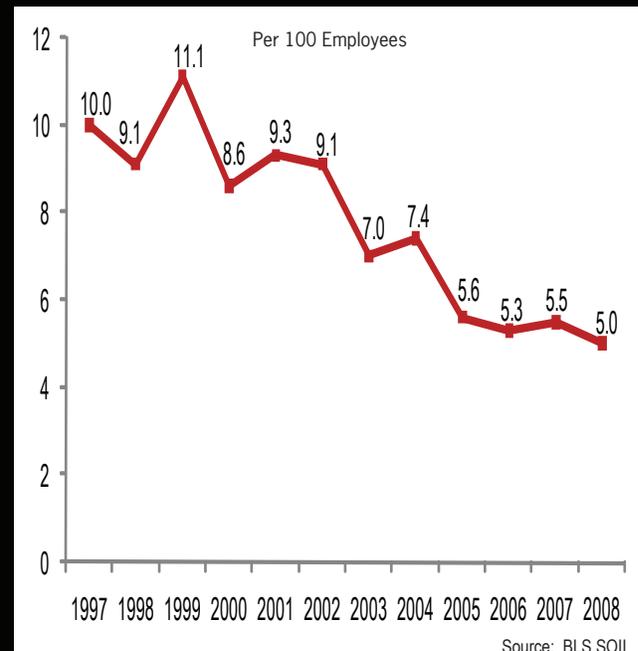
Overwhelmingly, the most often reported non-fatal injury in the transportation and warehousing industry is **sprains and strains** (58%). This is followed by **bruises and contusions** (10%) and **fractures** (7%). Transportation and warehousing sub-industries with high worker injury and illness rates include **couriers and messengers** (9.4), **transit and ground passenger transportation** (7.3) and **air transportation** (6.4).

The predominant source of injury experienced by workers in the transportation and warehousing industry in 2008 is **floors and ground surfaces** (33%). Other sources included **containers** (17%) and **vehicles** (17%). The average amount of time for injured workers to spend away from work in this industry in 2008 is eight days. Injured worker characteristics indicate that **Caucasian** (47%) **males** (61%), **ages 35-34** (29%) suffer the majority of the non-fatal injuries in this industry.

**Transportation and Warehousing Injury and Illness Rates and Numbers**

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	72.6	10.1	10.0	5.1	29
1998	99.1	9.0	9.1	5.3	23
1999	100.5	9.0	11.1	6.4	34
2000	110.4	8.7	8.6	4.8	26
2001	105.6	8.7	9.3	6.0	23
2002	104.7	7.5	9.1	5.7	27
2003	107.7	7.8	7.0	7.0	29
2004	101.8	7.3	7.4	7.0	29
2005	105.2	7.0	5.6	6.3	29
2006	108.8	6.5	5.3	5.9	34
2007	110.9	6.4	5.5	6.2	31
2008	108.8	5.7	5.0	5.8	16

**Indiana Transportation and Warehousing Injury and Illness Rate**



# State-Wide Traffic Deaths Lowest in 80+ Years

**Statistics** from the Indiana State Police (ISP) through December 28, 2009 show 680 highway fatalities, compared to 814 for the same period in 2008. That is more than a **16% reduction**.

Since 2004, when there were 947 fatalities, there has been a 28% drop in roadway deaths. For the first time ever, ISP issued more than one million traffic arrests and written warnings in 2009.

The last time Indiana recorded less than 700 fatalities for a single year was 1925, when the total was 670, according to records maintained by the state Department of Health. In 1925, 711,364 vehicles were registered in the state; the fatality to vehicle rate was 1 to 1,062. There are **eight times as many vehicles (5,676,076) registered in Indiana now**, and the fatality to vehicle rate is **1 to 8,347**.

Hoosiers drove approximately the same number of miles in 2009 as in 2008, according to the Indiana Criminal Justice Institute (ICJI). In recent years, Indiana has enacted tougher seat belt laws, added **250 more state troopers on Indiana's highways** and stopped more motorists for safety violations. Indiana is also taking a tough approach toward impaired driving. Indiana continues to debate tighter controls on

texting while driving and cell phone usage in general while driving. Distracted driving continues to be a danger.

## Indiana Traffic Safety

- 1.** Driving While Intoxicated (DWI) arrests are up 54% since 2004.
- 2.** ISP is near one million traffic enforcement actions (traffic arrests + written warnings) for 2009.
- 3.** Indiana's observed seat belt usage climbed to a record high of 92.6% in 2009.
- 4.** 150 miles of new cable safety barriers were installed within interstate medians in 2009 by the Indiana Department of Transportation.

## It Happened Here: Rush County, Indiana

**Background:** Between 2003 and 2008 in Indiana, 13 workers were fatally injured by making contact with overhead power lines.

**Fatal Event:** In Rush County, on November 18, 2009, a 48 year-old semi-truck driver arrived at a mill demolition site. The semi-truck driver asked the supervisor of the demolition company where he could unload his dump trailer. The supervisor indicated that the trailer could be unloaded anywhere on the property.

The driver completed dumping the truck's load onto the ground and the dump trailer was moving downward from an elevated position. Sometime during the dump trailer's descent, contact was made with energized overhead power lines.

The semi-truck driver exited the truck's cab and was electrocuted.

**Discussion:** An aluminum or steel vehicle body will conduct electricity. When unloading dump trailers, it is critical to ensure there are no electrical wires in the immediate area. Additionally, drivers should never leave the controls while the dump trailer body is in a raised position.



A semi-truck driver was electrocuted while exiting the cab of his truck after his dump trailer made contact with overhead power lines. (Photo provided by Rush County Sheriff)

# Trucking Fatalities by the Mile

Joseph Black, BLS Survey Coordinator researches trucking fatalities by the mile.

**Like** anyone who operates a vehicle, truck drivers often face issues with **weather** as well as other factors that can lead to accidents, which can result in serious injury or death for those involved. Truck drivers also face the added pressures of working with **deadlines** and **long hours of driving**. Federal law allows over-the-road truck drivers to work as many as 70 hours a week. Inconsistent speed limits for trucks in the various states, as well as varied levels of law enforcement, can present issues for truck drivers trying to meet deadlines.

The following study looks at the number of fatalities in each state,\* and compares those numbers with the total number of miles of road in each state. This comparison helps to measure the frequency of truck driver fatalities by state.

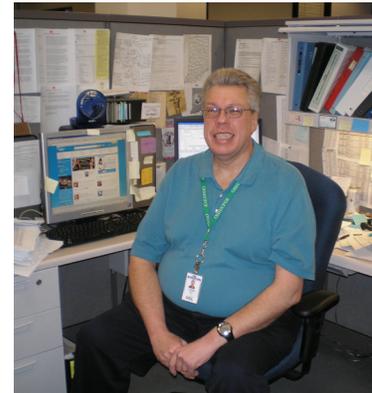
Data for the study was available on the U.S. Department of Transportation (U.S. DOT), Federal Highway Administration’s website, which contains the total number of miles of road in each of the 50 states, along with the District of Columbia and Puerto Rico. The total road miles figures in the table below include all types of roads, from interstates and U.S. and State highways to rural roads and streets under local jurisdictions.

The study includes only the fatalities of truck drivers that involved highway transportation incidents

(i.e. those occurring on any type of roadway except parking lots). Truck drivers include **over-the-road truck drivers**, as well as **local truck drivers** and **truck drivers involved in sales** (e.g. drivers for beverage and snack food companies who transport stock to retail locations).

Once the data was obtained, the number of miles in each state was divided by the number of fatalities. The quotient of this equation is the number of miles per fatality in each state. As the results of the study illustrate, the more miles of road a state has, the lower the number of fatalities per area of land. Conversely, when the number of miles is lower, this represents a greater number of fatalities per paved land area.

Below, is an excerpt from a table constructed using this data. The states are listed from the lowest number of miles per fatality to the largest. For more BLS data, visit [www.bls.gov](http://www.bls.gov) and click on “Injuries, Illnesses & Fatalities.” Additional data from the Federal Highway Administration of the U.S. DOT is available at [www.fhwa.dot.gov](http://www.fhwa.dot.gov).



BLS Survey Coordinator, Joseph Black.

Rank	State	Number of Fatalities From Highway Transportation Incidents <sup>1</sup>	Total Number of Road Miles <sup>2</sup>	Road Miles per Fatality <sup>3</sup>
-	All U.S.	653	4,033,002	6,176
1	Wyoming	12	27,835	2,320
2	New Jersey	11	38,560	3,505
3	Indiana	27	97,037	3,594
4	Kentucky	21	78,233	3,725
5	Maryland	8	31,098	3,887
6	Florida	31	121,996	3,935
7	Pennsylvania	30	121,294	4,043
8	New York	28	113,617	4,058
9	West Virginia	9	37,052	4,117
10	Tennessee	22	91,417	4,155

\*Alaska, Hawaii, Idaho, Maine New Hampshire, Rhode Island and Vermont did not have the minimum number of at least three (3) fatalities in order for their totals to be published by the BLS in 2006.

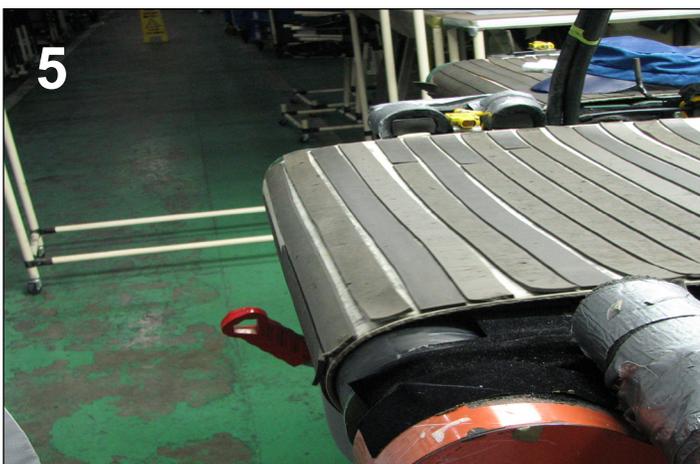
<sup>1</sup>Number of Fatalities from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) in cooperation with the Indiana Department of Labor.

<sup>2</sup>Total Number of Road Miles from the Federal Highway Administration, U.S. Department of Transportation.

<sup>3</sup>Road Miles per Fatality are rounded to the nearest whole number.

# Real Hazards, Real Workplaces

Can you identify the hazard(s) in the pictures below? Photos used on this page are of real hazards found in Indiana workplaces taken by IOSHA & INSafe employees.



Picture 1: Vermin Control. 1910.141(a)(5) Picture 2: No locked Exit Doors. 1910.36(d)(1) Picture 3: Missing Cover. 1910.305(b)(2)(i). Picture 4: Hazard Communication - chemical labeling. 1910.1200(f)(5)(i). Picture 5: Ingoing Nip Point - 1910.212(a)(1). Picture 6: Modifications. 1910.178(a)(4). Photos 1-5 taken by Jeanne Hedge, IOSHA Compliance Safety and Health Officer. Photo 6 taken by Rogelio Mancillas, INSafe Safety Consultant.

# Becoming a Special Government Employee

Indiana VPP STAR Site, **Mead Johnson Nutrition**, hosted a three-day SGE Training.

**Mead** Johnson Nutrition, a leading employer in Southwestern Indiana and a world leader in pediatric nutrition, has provided assistance to help Indiana OSHA train volunteers to serve as Special Government Employee (SGE) worksite evaluators for OSHA's Voluntary Participation Program (VPP). Companies seeking VPP certification must apply to the program and undergo a rigorous site-based evaluation in order to qualify for recognition among the state's most safety-conscious employers.

This past August, Mead Johnson, the maker of Enfamil® infant formula, hosted a three-day SGE training session at its Evansville-based Global Operations Center and North America headquarters. The event was the first of its kind in Southwestern Indiana and only the second in the state. Seventeen participants from 10 industries from throughout the Midwest completed the training, have been sworn in, and are now qualified to serve as SGEs on future VPP worksite evaluation teams.

Stephanie Lancaster, Associate Director, Global Environmental Health & Safety for Mead Johnson, was trained as an SGE in 2008 and served as a member of a VPP evaluation team earlier this year. She is finding the insights gained to be valuable as Mead Johnson works to attain VPP's highest-level "Star" status during its evaluation next April. The company is already a VPP "Merit" level site.

"It's interesting to have experienced the evaluation process from opposite perspectives," she said. "As a Mead Johnson employee, I'm proud that our company has earned VPP certification because that's really all about people having a safe place to work – and industry and government coming together to make that happen. From the other view, as an SGE and a VPP evaluation team member, it's valuable to be in the room and part of the conversation as decisions are being discussed and made. I appreciate that the evaluation teams want the sites to succeed -- and that

they want them to do that by reaching the required standards."

VPP Manager Mike Gaskill, who is with IOSHA, said that participation from private industry is essential to the success and growth of the program. "The state

simply does not have the manpower to do this alone, so the value that companies such as Mead Johnson provide in facilities and assistance is monumental," he said. "We have called upon 12 SGEs during 2009, up from eight in 2008, and we expect those numbers to continue to increase."

He said that Stephanie Lancaster's assistance as an SGE earlier this year exemplifies how the program is intended to work. "She was quite helpful, and I would

like to recognize her for that assistance – and also to thank Mead Johnson for making her available to us." Gaskill added that SGEs must be federally approved in order to avoid conflict of interest before they can be assigned to a particular team. In addition, the applying organizations are made aware of the SGEs and the identity of their employers and have the opportunity to provide consent before the evaluations occur.

As a participant during this year's session, Mead Johnson's Evansville Supply Center Safety Coordinator Greg Huett is looking forward to the company's opportunity to attain VPP Star status as well as his first assignment as an SGE further out. "It was very enjoyable during the training session to be able to interact with occupational health and safety professionals from other businesses and industries," he said. "I think there will be a great deal of value in getting out in the field and seeing what other companies are doing. It's really amazing to come together and be able to learn from one another." Thanks to SGE's Rhonda Scherer and Ken Sicard from the Kimball group in Jasper and Beth Jewell from IOSHA for their assistance with training this new group of SGE's.



The newest Special Government Employees are sworn-in after training. (Submitted Photo)

# IN Review 2010 Contributors

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Mrs. Friend is the Director of the Indiana Department of Labor's Quality, Metrics and Statistics Division. Her responsibilities include the collection and dissemination of occupational injury, illness and fatality data for working Hoosiers and leading departmental process improvement projects. Mrs. Friend received her Bachelor of Science Degree in Statistics and Mathematics from Purdue University. **Contributing Editor and Author**

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Mr. Black is the coordinator for the two cooperative programs with the U.S. Department of Labor, Bureau of Labor Statistics (BLS). Prior to joining the Quality, Metrics and Statistics Division in 1998, Mr. Black had previously worked in the division from 1983-1991 and moved to Accounting from 1991 until his return to the division in 1998. Mr. Black has a Bachelor of Arts Degree in Radio/Television with a Marketing Minor from Indiana University. **SEE PAGE 10 and 35**

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Mr. Duncan is a Health Consultant for the Indiana Department of Labor's OSHA Consultation Program, INSafe. His responsibilities include providing occupational health consulting and training services to Hoosier employers. Prior to joining INSafe in 1991, Mr. Duncan was a compliance officer with IOSHA for six years. Mr. Duncan has a Bachelor of Arts Degree in Biology from Canisius College in Buffalo, New York. **SEE PAGE 14**

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Mr. Kattau graduated from Marion College in Indianapolis with a Bachelor of Science Degree in Biology. Mr. Kattau worked at an Indianapolis chemical company for 33 years in various areas and capacities. Mr. Kattau has been with IOSHA since 2001 as a Compliance Health and Safety Officer, Supervisor and currently serves as Director. **SEE PAGE 15**

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Mr. Slade is an Industrial Hygiene Compliance officer for IOSHA. His responsibilities include health and safety inspections throughout the state. Mr. Slade has been the lead investigator for process safety management (PSM) investigations for IOSHA since 1998. Prior to joining IOSHA in 1990, Mr. Slade worked for Jackson Group and for Heritage Engineering/Remediation. Mr. Slade has a Bachelor of Science Degree in Public/Environmental Health from Indiana University/Purdue University Indianapolis. **SEE PAGE 11**

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## TECHNICAL EDITING

Technical editing services were provided by Janet Tearman.

**IN Review** is an annual publication of the Indiana Department of Labor's Quality, Metrics and Statistics Division. For this report, the Indiana Department of Labor used the Census of Fatal Occupational Injuries (CFOI) and Survey of Occupational Injuries and Illnesses (SOII) research files provided by the Bureau of Labor Statistics (BLS) for calendar year 2008. BLS 2009 CFOI data will be released in August 2010. BLS 2009 SOII data will be released in October 2010. Because of confidentiality restrictions, individual case information from the CFOI data cannot be reported. Information for the cases described in this report was obtained solely from the Indiana Department of Labor field investigations.

# Indiana Non-fatal Injury and Illness Rates

Industry Sector	Total Recordable Cases			Cases with Days Away from Work, Job Transfer or Restriction								Other Recordable Cases			
	2006	2007	2008	Total			Cases with Days Away from Work			Cases with Job Transfer or Restriction			2006	2007	2008
				2006	2007	2008	2006	2007	2008	2006	2007	2008			
All Industries including State and Local Government.....	5.5	5.2	4.9	2.7	2.4	2.3	1.1	1.1	1.1	1.4	1.3	1.2	2.9	2.7	2.6
Private Industry.....	5.4	5.1	4.7	2.7	2.5	2.3	1.1	1.1	1.1	1.5	1.3	1.2	2.7	2.6	2.4
Goods Producing.....	6.9	6.4	5.6	3.5	3.1	2.7	1.5	1.3	1.2	2.0	1.8	1.6	3.4	3.4	2.8
Natural Resources and Mining.....	4.7	6.1	5.8	2.8	3.5	3.2	1.9	2.2	1.6	0.9	1.3	1.6	1.9	2.5	2.6
Agriculture, Forestry, Fishing and Hunting.....	5.8	8.4	7.6	3.2	4.8	3.9	2.0	2.7	1.4	1.2	2.1	2.5	2.6	3.6	3.7
Mining.....	3.4	3.3	3.8	2.3	2.1	2.4	1.7	1.7	1.9	0.3	0.4	0.6	1.2	1.3	1.3
Construction.....	5.6	5.7	4.6	2.9	2.5	2.6	2.2	1.9	1.8	0.7	0.6	0.8	2.7	3.2	2.1
Manufacturing.....	7.3	6.6	5.8	3.6	3.2	2.8	1.3	1.1	1.0	2.4	2.0	1.8	3.6	3.4	3.0
Service Providing.....	4.5	4.4	4.3	2.2	2.2	2.1	1.1	1.0	1.0	1.1	1.1	1.1	2.3	2.3	2.2
Trade, Transportation and Utilities.....	5.2	5.1	4.8	3.1	3.0	2.7	1.5	1.4	1.3	1.6	1.6	1.3	2.1	2.1	2.1
Wholesale Trade.....	4.7	4.7	4.6	2.9	2.8	2.4	1.5	1.5	1.2	1.3	1.3	1.2	1.9	1.9	2.2
Retail Trade.....	5.4	5.1	4.9	2.9	2.7	2.4	1.3	1.1	1.0	1.6	1.7	1.4	2.5	2.4	2.5
Transportation and Warehousing.....	5.3	5.5	5.0	3.8	3.8	3.6	2.0	1.9	2.2	1.8	2.0	1.4	1.5	1.7	1.4
Utilities.....	4.4	4.4	3.3	2.0	2.3	1.8	0.9	0.9	0.7	1.1	1.4	1.0	2.4	2.2	1.5
Information.....	2.4	2.4	3.3	1.3	1.2	1.5	0.5	0.9	0.8	0.8	0.3	0.8	1.1	1.2	1.8
Financial Activities.....	1.9	1.5	1.5	0.8	0.6	0.7	0.4	0.5	0.5	0.4	0.2	--	1.1	0.9	0.8
Professional and Business Services.....	2.7	2.5	2.4	1.3	1.2	1.2	0.8	0.7	0.7	0.5	0.5	0.5	1.4	1.3	1.2
Educational and Health Services.....	6.2	6.6	6.0	2.6	2.7	2.7	1.0	1.1	1.1	1.6	1.6	1.6	3.6	3.9	3.2
Educational Services.....	2.4	4.2	2.4	1.0	1.3	0.9	0.5	0.6	0.6	0.5	0.7	0.3	1.4	3.0	1.5
Healthcare and Social Assistance.....	6.6	6.9	6.4	2.8	2.9	2.9	1.1	1.2	1.2	1.7	1.7	1.8	3.8	4.0	3.5
Leisure and Hospitality.....	4.2	4.7	4.5	1.3	1.5	1.5	0.8	0.6	0.7	0.5	0.9	0.7	2.8	3.2	3.0
Other Services Except Public Administration.....	4.4	3.4	4.6	1.4	2.2	0.9	0.4	1.9	1.3	0.9	0.3	0.8	3.0	1.2	2.5
State and Local Government.....	6.6	5.7	5.7	2.7	2.3	2.1	1.7	1.2	1.2	1.0	1.1	0.9	3.9	3.4	3.7
State Government.....	3.5	3.7	3.6	1.5	1.6	1.6	1.0	1.0	1.1	0.5	0.6	0.5	2.0	2.0	2.0
Local Government.....	8.1	6.5	6.5	3.3	2.5	2.2	2.1	1.2	1.2	1.2	1.3	1.0	4.8	4.0	4.2

• Incidence rates represent the number of injuries and illnesses per 100 full-time workers and were calculated as (NEH) X 200,000 where

- N = number of injuries and illnesses
- EH = total hours worked by all employees during the calendar year
- 200,000 = base for 100 equivalent full-time workers (working 40 hours per week, 50 weeks per year)
- North American Industry Classification System, 2002 Edition.
- Excludes farms with fewer than 11 employees.

• Data for mining (Sector 21 in the North American Industry Classification System 2002 Edition) includes establishments not governed by the Mine Safety and Health Administration (MSHA) rule and reporting, such as those in oil and gas extraction and related support activities. Data for mining operators in coal, metal and nonmetal are provided to the Bureau of Labor Statistics (BLS) by MSHA, United States Department of Labor. Independent mining contractors

are excluded from the coal, metal, and nonmetal mining industries. These data do not reflect the changes the Occupational Safety and Health Administration (OSHA) made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable to estimates in other industries.

- Data for employers in railroad transportation are provided to the BLS by the Federal Railroad Administration, United States Department of Labor.
- Days away from work cases include those that result in days away from work with or without restricted work activity.
- Data too small to be displayed.

NOTE: Because of rounding, components may not add to totals. Dash indicates data do not meet publication guidelines. SOURCE: Bureau of Labor Statistics, United States Department of Labor, Survey of Occupational Injuries and Illnesses (SOII), in cooperation with participation State agencies.



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