

Emergency Action Plan

INCIDENT

January 20th, 2020

VINELAND, N.J. (AP) – A Philadelphia man was killed in an industrial accident in a New Jersey processing facility, authorities said.

Emergency responders were called to the Safeway Freezer Storage plant in Vineland shortly after 12:30 a.m. Saturday, police said.

Lt. Brian Armstrong said 28-year-old Felipe Rodriguez-Tzon was pronounced dead at the scene in a refrigerated area of the facility. The worker had already been removed from machinery by the time emergency crews arrived, Lt. Michael Feaster said.

NEED TO KNOW

An **Emergency Action Plan** (EAP) is a written document required by particular OSHA standards. The purpose of an EAP is to facilitate and organize employer and employee actions during workplace emergencies. Well-developed emergency plans and proper employee training (such that employees understand their roles and responsibilities within the plan) will result in fewer and less severe employee injuries and less structural damage to the facility during emergencies. A poorly prepared plan, likely will lead to a disorganized evacuation or emergency response, resulting in confusion, injury, and property damage.

Minimum Requirements

Putting together a comprehensive emergency action plan that deals with those issues specific to your worksite is not difficult. It involves taking what was learned from your workplace evaluation and describing how employees will respond to different types of emergencies, taking into account your specific worksite layout, structural features, and emergency systems.

Develop & Implement an EAP

Drafting an emergency action plan (EAP) is not enough to ensure the safety of your employees. When an evacuation is necessary, you will need responsible, trained individuals who can supervise and coordinate activities to ensure a safe and successful evacuation.

Evacuation Elements

A disorganized evacuation can result in confusion, injury, and property damage.

Fight or Flee?

A fire is the most common type of emergency for which small businesses must plan. Evacuation plans that designate or require some or all of the employees to fight fires with portable fire extinguishers increase the level of complexity of the plan and the level of training that must be provided employees.

Shelter-in-Place

Chemical, biological, or radiological contaminants may be released into the environment in such quantity and/or proximity to a place of business that it is safer to remain indoors rather than to evacuate employees.

Fire, Rescue, Medical Services

Although most of us quickly move away from the hazardous environments created during emergency situations, a group of dedicated and well-trained professional emergency responders and medical service personnel are tasked with containing and mitigating these incidents, rescuing individuals at-risk, and providing medical assistance to the injured.

Reporting Emergencies

Employees must know how to report emergencies. Some use internal telephone numbers, intercom, or public address systems to notify other employees. It is important for employees to also notify the proper authorities such as fire, medical, or rescue services, if

your company relies on this type of assistance during an emergency.

Where required by some Occupational Safety and Health Administration standards, firms with more than 10 employees must have a written emergency action plan; smaller companies may communicate their plans orally. Top management support and the commitment and involvement of all employees are essential to an effective emergency action plan.

Employers should review plans with employees when initially put in place and re-evaluate and amend the plan periodically whenever the plan itself, or employee responsibilities, change. Emergency procedures, including the handling of any toxic chemicals, should include:

- Escape procedures and escape route assignments.
- Special procedures for employees who perform or shut down critical plant operations.
- Systems to account for all employees after evacuation and for information about the plan.
- Rescue and medical duties for employees who perform them.
- Means for reporting fires and other emergencies.

Chain of Command

The employer should designate an emergency response coordinator and a backup coordinator. The coordinator may be responsible for plantwide operations, public information and ensuring that outside aid is called. Having a backup coordinator ensures that a trained person is always available. Employees should know who the designated coordinator is. Duties of the coordinator and employer include:

- Determining what emergencies may occur and seeing that emergency procedures are developed to address each situation.
- Directing all emergency activities including evacuation of personnel.
- Ensuring that outside emergency services are notified when

necessary.

- Directing the shutdown of plant operations when necessary.

Emergency Response Teams

Emergency response team members should be thoroughly trained for potential crises and physically capable of carrying out their duties. Team members need to know about toxic hazards in the workplace and be able to judge when to evacuate personnel or when to rely on outside help (e.g., when a fire is too large to handle). One or more teams must be trained in:

- Use of various types of fire extinguishers.
- First aid, including cardiopulmonary resuscitation (CPR) and self-contained breathing apparatus (SCBA).
- Requirements of the OSHA bloodborne pathogens standard.
- Shutdown procedures.
- Chemical spill control procedures.
- Search and emergency rescue procedures.
- Hazardous materials emergency response.

Response Activities

Effective emergency communication is vital. An alternate area for a communications center other than management offices should be established in the plans, and the emergency response coordinator should operate from this center. Management should provide emergency alarms and ensure that employees know how to report emergencies. An updated list of key personnel and off-duty telephone numbers should be maintained.

Accounting for personnel following evacuation is critical. A person in the control center should notify police or emergency response team members of persons believed missing.

Effective security procedures can prevent unauthorized access and protect vital records and equipment. Duplicate records of essential accounting files, legal documents and lists of employee relatives – to be notified in case of emergency – can be kept at off-site locations.

Training

Every employee needs to know details of the emergency action plan, including evacuation plans, alarm systems, reporting procedures for personnel, shutdown procedures, and types of potential emergencies. Any special hazards, such as flammable materials, toxic chemicals, radioactive sources or water-reactive substances, should be discussed with employees. Drills should be held at random intervals, at least annually, and should include outside police and fire authorities.

Training must be conducted at least annually and when employees are hired or when their job changes. Additional training is needed when new equipment, materials or processes are introduced, when the layout or design of the facility changes, when procedures have been updated or revised, or when exercises show that employee performance is inadequate.

Personal Protection

Employees exposed to or near accidental chemical splashes, falling objects, flying particles, unknown atmospheres with inadequate oxygen or toxic gases, fires, live electrical wiring, or similar emergencies need appropriate personal protective equipment.

Medical Assistance

First aid must be available within 3 to 4 minutes of an emergency. Worksites more than 3 to 4 minutes from an infirmary, clinic, or hospital should have at least one person on-site trained in first aid (available all shifts), have medical personnel readily available for advice and consultation, and develop written emergency medical procedures.

It is essential that first aid supplies are available to the trained first aid providers, that emergency phone numbers are placed in conspicuous places near or on telephones, and prearranged ambulance services for any emergency are available. It may help to coordinate an emergency action plan with the outsider responders such as the fire department, hospital emergency room, EMS providers and local HAZMAT teams.

Unexpected emergencies happen every year in this country. Your company needs an Emergency Response Plan to cover all expected and unexpected disasters. All employees must be trained in the roles they will play in an emergency.

Fire, natural disasters, and other emergencies can strike your workplace without warning. While you can't predict them, you can prepare for them and preparedness **save lives, prevent injuries; and limits property damage.**

BUSINESS / REGULATIONS

According to **OSHA**, the purpose of an **Emergency Action Plan** (or EAP for short) is to facilitate and organize employer and employee actions during workplace emergencies.

The goal with any EAP is to prevent employee injuries and structural damage to the facility during emergencies.

OSHA Construction Standard 1926.35(a) The emergency action plan shall be in writing and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies. **1926.35(e)(3)** For those employers with 10 or fewer employees the plan may be communicated orally to employees and the employer need not maintain a written plan.

In the event of an emergency all personnel must know to do or be aware of:

- basic first aid
- how to report any emergency situation
- the procedure for emergency evacuation, including the type of evacuation and exit route assignments
- what does the alarm system look or sound like to alert workers of emergencies
- designated employees that may be required stay behind to continue critical plant operations
- how to account for all employees after evacuation
- procedures for employees performing rescue or medical duties
- name or job title of employees to contact for plan information

Examples of potential workplace emergencies that all staff must be prepared for include:

- Fires and Explosions
- Tornadoes and Earthquakes
- Heavy Equipment Failures
- Confined Space Rescues
- Hazardous Material Incidents
- Cave-in Rescues
- Fall Arrest Rescues
- Worker Injuries
- Struck-by/Caught-in Incidents
- Medical Emergencies

Site-specific emergency action plans (EAP) must be in place for every jobsite. The EAP should be in easy-to-read type and posted in multiple locations across the jobsite so every worker has the opportunity to review as needed.

The basic EAP that is posted should include:

- Address and description of the site location
- Emergency response numbers for 911, fire department, police, emergency responders
- Name and address of nearest medical facilities
- Map to nearest medical facilities

STATISTICS

Out of 4,779 worker fatalities in private industry in calendar year 2018, 1,008 or 21.1% were in construction – that is, one in five worker deaths last year were in construction. The leading causes of private sector worker deaths (excluding highway collisions) in the construction industry were falls, followed by struck by object, electrocution, and caught-in/between. These “Fatal Four” were responsible for more than half (58.6%) the [construction worker deaths in 2018](#), BLS reports

The American Red Cross released statistics that illustrate their enormous contribution to emergency response and disaster recovery in the United States. Below are statistics that cover the Red

Cross's last six months of relief efforts in response to fires, floods, hurricanes, tornadoes, and earthquakes.

- From April to September 2011, the Red Cross responded to:
- 25 large multi-family fires
- 14 floods
- 15 hurricanes or tropical storms
- 21 tornadoes
- 6 wildfires
- 7 combined floods and tornadoes
- 4 other storms
- 1 earthquake
- Launched 93 disaster relief operations in 42 states and territories
- Opened 899 shelters
- Had 121,854 shelter overnight stays
- Provided 2,337,542 bulk items
- Provided 106,732 clean up kits
- Provided 107,077 comfort kits
- Served 1,864,065 meals
- Served 4,462,684 snacks
- Provided 59,646 mental health consultations
- Provided 69,235 health services consultations
- Deployed 24,178 Red Cross workers

RECOMMENDATIONS

An Emergency Action Plan is basically a “**How Do We Get Out of Here Safely**” plan. A good plan should anticipate all possible emergencies as well as all natural and manmade disasters that could occur.

Employees should regularly practice and review emergency response. Practice will expose errors in the plan which could result in lost lives.

Recommendations to prepare for workplace emergencies are:

- Know where your emergency telephone numbers are located and which agency to contact first.

- Know where the two nearest escape routes are located.
- Learn to use a fire extinguisher. You should use it on a small fire only. If the fire gets out of hand, leave the area. Unnecessary heroics have killed many employees.
- Learn how and when to operate internal alarm systems.
- Know how to find and operate eye wash units and safety showers. These should be clearly marked and easily accessed. Before helping a victim of an incident or before assisting in an emergency, always ensure it is safe for you to do so. Sometimes the best plan is just to get to safety. An event such as a failed confined space rescue resulting in multiple fatalities is an example of making a bad situation worse by trying to help.
- Do not overreact. Rushing or making poor choices when dealing with an emergency can result in more victims or create a worse situation in general.
- Understand your company's policies and procedures regarding specific weather emergencies such as a tornado or flood.
- Know where emergency meeting points are at your worksite. Also be familiar with the address of where you're at on a jobsite or for your workplace. If you have to call 911, one of the first questions they ask is- "Where are you located?".
- Know where emergency response equipment is located onsite and how to use it. Also be familiar with emergency shutoff switches on equipment or machinery.
- Know the signs and symptoms of common medical emergencies or medical emergencies that can occur in your workplace. Knowing what to look for can make the difference in whether someone gets the medical attention they need or not.

PREVENTION

Conduct Hazard Assessment

The primary hazards in an emergency such as a fire, chemical release, serious machine malfunction, workplace violence, or natural disaster are often only the beginning of the damage and destruction. A hazard assessment will shed light on all these

possible hazards.

Identification of Emergency Control Procedures and Written EAP

The next step is to use the findings of your hazard assessment to develop **A Written Emergency Action Plan (EAP)**. The plan must include:

1. All possible emergencies, consequences, required actions, written procedures, and available resources.
2. A detailed list of personnel to contact in an emergency and their role in an emergency.
3. A list of external organizations to contact such as fire, rescue, and ambulance services; hospitals, police department and any government agencies; utility companies; and any industries in nearby that should be informed because of a potential safety risk to their workers and their operations.
4. Floor plans and large-scale maps showing excavation routes, emergency equipment, hazardous areas (i.e. chemical storage), as well as gas and water lines and other information as required by applicable safety regulations.

An EAP should include the following:

1. **Personnel Assignments:** The EAP should establish a clear chain of command in which all personnel have clearly assigned roles in the event of an evacuation. The EAP should designate:
 - A leader with authority to order an evacuation or shutdown.
 - An appropriate number of evacuation wardens to help with the evacuation and ensure that everybody is accounted for before evacuating themselves.
 - Individuals to remain behind to carry out or close-down vital plant operations before evacuating themselves.
 - Individuals authorized to perform rescue or medical duties in the event of an evacuation.
2. **At a minimum, the EAP must incorporate the following procedures:**

- Procedures for reporting fires and other emergencies.
- Emergency evacuation procedures, including evacuation type and identification of exit routes.
- Procedures to help disabled employees that require assistance to evacuate.
- Procedures for the employees who remain behind to operate critical plant operations before evacuating themselves.
- Procedures to account for all employees after evacuation.
- Procedures for the employees performing rescue or medical duties.

3. Alarm & Notification Systems including:

- An alarm system that uses a distinctive signal that all employees recognize to communicate orders to evacuate or perform other actions under the EAP.
- A public address or other emergency communications system that's available to use to notify employees of the emergency and contact local fire, police and other emergency respondents.
- An auxiliary power supply in case electricity is shut off.

4. PPE & Protective Clothing: Workers counted on to extinguish fires or who are otherwise exposed to risk of fire and explosion must be equipped with and use appropriate PPE and protective clothing.

- Foot and leg protection;
- Protective footwear;
- Body protection;
- Gloves or glove systems;
- Head, eye and face protection; and
- Respiratory protective equipment.

Training and Education

Workers must receive training and education needed to carry out their roles under the EAP.

Other items to educate workers on include:

- Threats, hazards and protective actions.

- Notification, communication and warning procedures.
- Means of locating family members in an emergency.
- Emergency response procedures.
- Evacuation, shelter and accountability procedures.
- Location and use of emergency equipment.
- Procedures for emergency shutdown.

Ensure workers understand and can apply their training on the job by:

- Quizzing workers on the lesson after you deliver it.
- Making workers demonstrate the procedures covered during the training.
- Making workers demonstrate proper use of the PPE covered during the training.
- Staging evacuation drills to verify that workers can carry out the EAP and evacuate safely in the event of a fire or other emergency.

Inspect, Monitor, Reinforce, and Improve

You must review the EAP with each worker the plan covers when:

- The EAP is first developed or the worker is first assigned to carry out a responsibility under the plan;
- The worker's responsibilities under the EAP change; and
- Changes are made to the EAP itself.

Monitoring must be carried out on an ongoing and continuous basis. The monitoring process never ends.

Electrical

INCIDENT

The Occupational Safety and Health Administration (OSHA) cited tank railcar cleaning and repair provider Dana Railcare for

workplace safety and health violations at its facility in Wilmington, Delaware. The company faces \$371,276 in penalties.

OSHA [cited Dana Railcare](#) and proposed more than \$550,000 in penalties for safety and health violations following a May 2019 employee fatality at the company's facility in Pittston, Pennsylvania. Also last year, the agency placed Dana Railcare into the agency's Severe Violators Enforcement Program (SVEP). The company is contesting the citations and proposed penalties stemming from the May 2019 incident.

OSHA issued new citations following a [pair](#) of [inspections](#) conducted after receiving a complaint of numerous safety and health hazards at the Wilmington facility.

On February 20, OSHA issued citations for 23 violations overall. Agency inspectors cited the company for **Electrical and Explosion Hazards**, improper use of respirators and inadequate secondary air supply, insufficient means of egress, lack of medical clearance for respiratory protection use, lack of signage in a silica-regulated area, and use of defective powered industrial trucks.

On November 25, 2019, OSHA cited Dana Railcare for 13 violations related to the May 2019 worker fatality. **An Employee was Asphyxiated While Servicing a Railcar Containing Crude Oil Sludge.** OSHA cited the company for 4 willful and 3 serious violations for failing to protect employees from the hazards of entering permit-required confined spaces and for inadequate respiratory protection procedures.

In the latest set of citations, OSHA cited Dana Railcare for 1 willful, 2 repeat, 19 serious, and 1 other-than-serious violations. The agency issued a willful citation for 19 separate instances of employees entering tank cars for cleaning and maintenance without an auxiliary air supply.

"Failure to comply with OSHA standards leaves employees vulnerable to dangers that can cause serious and potentially fatal injuries," OSHA Area Director Erin Gilmore said in an agency statement.

The agency also issued citations for repeat violations of the

respiratory protection and wiring methods, components, and equipment standards. Dana Railcare previously was cited on July 25, 2016, for lack of medical clearance for respiratory protection use at its Nitro, West Virginia, facility. The company previously was cited on February 8, 2017, for using flexible cables and/or cords as a substitute for fixed wiring at the Wilmington facility.

Citations for serious violations included:

- Failing to conduct annual respirator fit testing;
- Failing to cover a junction box that housed the connection for a ceiling fan;
- Failing to Ensure Electrical Equipment Feeding a Distribution Panel was Approved by a Nationally Recognized Testing Laboratory and Marked with the Manufacturer's Name, Trademark, and other information;
- Failing to ensure a flexible cord was of a continuous length without splicing;
- Hazardous chemicals present along an exit route and obstructed exit routes, as well as emergency exits lacking "Exit" signs;
- Use of powered industrial trucks with damaged tires and failing to inspect powered industrial trucks; *and*
- Several violations related to the company's paint booth and sandblasting operations.

Severe violators are subject to mandatory follow-up inspections. Other steps the agency takes with severe violators include issuing regional or national news releases and sending letters to corporate officers about the company's obligations under the Occupational Safety and Health Act (OSH Act).

NEED TO KNOW

Workers in almost every work environment are exposed to electrical currents powerful enough to cause death by electrocution. Yet many workers are unaware of the potential hazards, which makes them even more vulnerable to the dangers.

There are four main types of injuries that can result from

electrical currents. These are:

1. Electrocution, which is fatal;
2. Electric shock;
3. Burns; and
4. Falls, which may occur when a worker contacts electrical energy.

Hazards / Dangers associated with electricity affect the majority of workplaces. In general industry, construction, or farming electrical hazards / dangers are present. The task is to have the ability to identify and recognize electrical hazards around you and then to reduce / mitigate and eliminate them.

The dangers of negligent use and non-diagnosed electrical equipment problems is manifold. Electricity kills!!!

- The current of a 60-watt light bulb can kill you.
- Between 1992 and 2010 there were 5,096 fatalities in the United States due to fatal contact with electricity. There was a total of 66,748 injuries that required days away from work in the same time period due to electricity. **The construction industry experiences the [majority of injuries and fatalities due to electricity](#).** These statistics do not include injuries caused by secondary events. For example, an individual falling from a ladder due to getting shocked. If these types of injuries were included, the statistics would be higher.

Everyday there are workers who suffer some type of shock, but do not seek or require treatment for their injuries. Because of this, it is difficult to fully track the occurrence of electrical shock in the workplace.

Causes of electrical shocks

Electricity travels in closed circuits, normally through a conductor. But sometimes a person's body—an efficient conductor of electricity—mistakenly becomes part of the electric circuit. This can cause an electrical shock. Shocks occur when a person's body completes the current path with:

- Both wires of an electric circuit
- One wire of an energized circuit and the ground
- A metal part that accidentally becomes energized
- Another “conductor” that is carrying a current

When a worker receives a shock on the job, electricity flows between parts of the body or through the body to a ground or the earth.

Effect of shocks on the body

An electric shock can result in anything from a slight tingling sensation to immediate cardiac arrest. The severity depends on:

- Amount of current flowing through the body
- Current’s path through the body
- Length of time the body remains in the circuit
- Current’s frequency

How can workers tell if a shock is serious?

A severe shock can cause considerably more damage than meets the eye. A victim may suffer internal hemorrhages and destruction of tissues, nerves, and muscles that aren’t readily visible. Renal damage also can occur. If an employee receives a shock, he or she should seek emergency medical help immediately.

What kind of burns can a shock cause?

Burns are the most common shock-related injury. An electrical accident can result in an electrical burn, arc burn, thermal contact burn, or a combination of burns.

- *Electrical burns* are among the most serious burns and require immediate medical attention. They occur when electric current flows through tissues or bone, generating heat that causes tissue damage.
- *Arc or flash burns* result from high temperatures caused by an electric arc or explosion near the body. These burns should be treated promptly.
- *Thermal contact burns* are caused when the skin touches hot surfaces of overheated electric conductors, conduits, or

other energized equipment. Thermal burns also can be caused when clothing catches on fire, as may occur when an electric arc is produced.

Why do people sometimes “freeze” when they are shocked?

When a person receives an electrical shock, sometimes the electrical stimulation causes the muscles to contract. This “freezing” effect makes the person unable to pull free of the circuit. It is extremely dangerous because it increases the length of exposure to electricity and because the current causes blisters, which reduce the body’s resistance and increases the current.

The longer the exposure, the greater the risk of serious injury. Longer exposures at even relatively low voltages can be just as dangerous as short exposures at higher voltages. Low voltage does not imply low hazard.

In addition to muscle contractions that cause “freezing,” electrical shocks also can cause involuntary muscle reactions. These reactions can result in a wide range of other injuries from collisions or falls, including bruises, bone fractures, and even death.

What should employees do if a co-worker “freezes” to a live electrical contact?

If a co-worker is “frozen” to a live electrical contact, employees should shut off the current immediately. If this is not possible, they can use boards, poles, or sticks made of wood or any other nonconducting materials and safely push or pull the person away from the contact. It’s important to act quickly, but employees should remember to protect themselves as well from electrocution or shock.

Static electricity is hazardous

Static electricity also can cause a shock, though in a different way and generally not as potentially severe as the type of shock described previously. Static electricity can build up on the

surface of an object and, under the right conditions, can discharge to a person, causing a shock. The most familiar example of this is when a person reaches for a door knob or other metal object on a cold, relatively dry day and receives a shock.

However, static electricity also can cause shocks or can just discharge to an object with much more serious consequences, as when friction causes a high level of static electricity to build up at a specific spot on an object. This can happen simply through handling plastic pipes and materials or during normal operation of rubberized drive or machine belts found in many worksites.

In these cases, for example, static electricity can potentially discharge when sufficient amounts of flammable or combustible substances are located nearby and cause an explosion. Grounding or other measures may be necessary to prevent this static electricity buildup and the results.

What's Arc Flash?

Arc flash, a release of heat energy that includes molten metals, hot metallic oxides and toxic burning smoke, is often violent, and deadly. Arc flash temperatures exceed 35,000 degrees Fahrenheit, hotter than the sun's surface, with 700 miles per hour projectile-producing pressure, which can throw a person across a room.

An estimated five to 10 arc flashes occur each day in the United States, according to a report from the National Institute for Occupational Safety and Health.

Arc flashes pose a particular risk **offshore**, where lower voltage machinery with between 480 and 600 voltages while not recommended is frequently worked on without the machinery being shut down. While no work is or should be done live on medium voltage machinery in general, work done on low voltage motor control centers and distribution boards cannot typically be shut down in a critical operation. Never work on live equipment but the reality is that people sometimes do.

A stumble by a worker or a dropped tool may cause conductors to be crossed, creating a blast. Damaged or overheated equipment,

particularly **offshore**, are other factors that can lead to an arc flash.

One arc flash incident can cost up to \$15 million, including healthcare costs, workers compensation, replacing equipment, increased insurance premium, and lost production time.

A 2010 report from the International Oil & Gas Producers Association found that 16.1 percent of all fatalities at oil fields were caused by an **electrical accident, explosion or burn**.

Fires and explosions are the third most common cause of worker death in the **oil and gas industry**. One out of seven occupational fatalities in the **oil and gas industry** results from a fire or explosion. From 2004 to 2008, fires and explosions caused 18.7 percent of worker deaths in the **oil and gas industry**, according to the U.S. Bureau of Labor Statistics.

BUSINESS / REGULATIONS

Common hazards, legal duties and precautions to take when working with electricity.

Electrical safety at work should be a concern to all organizations.

Electricity at Work Regulations

The **␣ELECTRICITY AT WORK REGULATIONS** apply to all aspects of the use of electricity within the workplace. They place duties on employers, employees and the self-employed to prevent danger.

Duty holders must

- have the electrical systems constructed in a way that prevents danger
- maintain the electrical systems as necessary to prevent danger (including a 5 year fixed installation inspection␣)
- carry out work on electrical systems carried out in a way that prevents danger.

Electrical equipment used in hazardous environments must be

constructed or protected to prevent it becoming dangerous. This includes

- extremes of weather
- extremes of temperature
- corrosive conditions.

Employees should only work on or with electrical equipment if they have suitable

- training
- knowledge
- experience

The **Health and Safety Executive (HSE)** have guidance you can download on the **Electricity at Work Regulations**.

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

The [Reporting of Injuries, Diseases and Dangerous Occurrences Regulations \(RIDDOR\)](#) advise that the following incidents must be reported.

- Electrical short circuit or overload causing fire or explosion.
- Plant or equipment coming into contact with overhead power lines.

You should also report injury to staff due to an electric shock or electrical burn that leads to

- unconsciousness
- requiring resuscitation
- admittance to hospital.

Safety Signs and Signals Regulations

The [Health and Safety \(Safety Signs and Signals\) Regulations](#) place duties on employers, duty holders and others who have responsibility for the control of work sites and premises, and

provide guidance on correct signage and nonverbal communication methods.□

STATISTICS

The **Electrical Safety Foundation International (ESFI)** uses the U.S. Bureau of Labor Statistics' (BLS) Census of Fatal Occupational Injuries (CFOI) and Survey of Occupational Injuries (SOII) to distill information specifically pertaining to fatal and nonfatal occupational electrical injuries. The most recent data covers the 24 year period from 1992-2017, but mainly focuses on 2003-2017 data.

Fatal Electrical Injuries

- There were 136 electrical fatalities in 2017. An 11.6% drop from 2016, returning to 2015 levels.
- Contact with / Exposure to electric current accounted for 2.6% of all workplace fatalities. In 2016, they accounted for 2.9%, in 2015 2.7% and 3.1% in 2014.
- Contact with / Exposure to electric current maintained its position as sixth most common type of workplace fatality.
- Electrocutions accounted for all but one of the workplace electrical fatalities.
- 54% of all fatal electrical injuries occurred in the construction industry compared to 53% in 2016. The second leading industry in electrical fatalities in professional and business services with 20 fatalities (15%).
- The utility industry had the highest *rate of* fatal electrical injuries (0.74 / 100,000) followed by construction (0.70/ 100,000)
- Electrical fatalities account for 5.7% of all electrical injuries.
- Good producing private industries (natural resources and mining, construction, manufacturing) accounted for 64.9% of fatal electrical injuries compared to 35.1% fatal injuries from service-providing private industries maintaining 2016 numbers
- Younger workers are more likely to experience electrical injuries:

- Workers 16 to 17 years of age experienced electrical fatalities at 5.4 times the average for all age groups;
- 18 to 19 age group – 2.4 times;
- 20 – 24 age group – 1.8 times;
- 25 – 34 age group – 1.5 times;
- 35 – 44 age group – 1.1 times;
- Those 45 years and up are at or below the average

Nonfatal Electrical Injuries

- There were 2,210 nonfatal electrical injuries in 2017, an increase of 35% over 2016, and a decrease of 10% over 2015.
- 25% of all nonfatal injuries resulting in days away from work could be attributed to electricity during 2017.
- The median number of days away from work for nonfatal electrical injuries was 10, double that of 2016 and the highest number since 2013.
- The industries with the leading number of nonfatal electrical injuries:
 - Construction – 360 (16%)
 - Real Estate and Rental and Leasing – 330 (15%)
 - Professional, Scientific, and Technical Services – 290 (13%)
 - Manufacturing – 260 (12%)
- Shocks accounted for 1,330 nonfatal electrical injuries, while burns accounted for 900.
- 140 shocks and 230 burns occurred in the construction industry.
- 40 shocks and 60 burns occurred in the utility industry
- Utilities had the highest *rate of* electrical injuries with 1.8 / 10,000 workers. Construction only had 0.6 / 10,000 workers.
- Real estate and rental and leasing had the second highest rate with 1.7 / 10,000 workers.
- The highest *rate of* nonfatal electrical shock was in the Arts, entertainment, and recreation industry with 1.1 / 10,000 workers. Utilities had 0.7 / 10,000 workers while construction had 0.2 / 10,000.
- The highest *rate of* nonfatal electrical burns was in the Real estate and rental industry with 1.6 / 10,000 workers.

Utilities had 1.1 / 10,000 workers while construction had 0.4 / 10,000.

PREVENTION

Electricity is always trying to find its way to the ground. When electricity flows, it takes the path of least resistance. Materials with a low resistance to electricity are known as conductors. Moisture is a good conductor of electrical current. Unfortunately, so is the human body.

When you touch a live electrical component, you can provide the electricity with an easy route to the ground. This is especially true if your hands are moist, or if you're touching something metal which is touching the ground, such as a metal ladder, another wire or plumbing.

When the electricity passes through your body, you receive an electrical shock. If you're extremely lucky it could be a mild shock. But sometimes even a small flow of electrical current can cause heart failure, brain damage or severe internal burns leading to death.

Here are Ten General Safety Tips for Working With or Near Electricity.

1. Don't stand in wet areas when using electrical tools.
2. Inspect cords for damage or wear prior to each use.
3. Unplug machinery, power tools and appliances before cleaning, inspecting, repairing or removing something from them.
4. When unplugging a cord from an outlet, pull on the plug, not the cord. Pulling on the cord causes wear and may lead to a shock.
5. If outlets or switches feel unusually warm, don't use them and get a qualified electrician to check the wiring.
6. Plug power tools into grounded outlets installed with Ground Fault Circuit Interrupters.
7. If it's necessary to affix cords to a wall or floor, use tape. Nails and staples can damage cords and cause fire and

shock hazards.

8. Don't tie power cords in a knot, as knots can cause short circuits and shocks. Instead, loop the cords or use a twist lock plug.
9. When working outdoors, watch for overhead power lines and buried power line indicators. Always assume overhead power lines are energized and stay at least 10 feet (3 meters) away from them.
10. Use "C" rated extinguishers for electrical fires. Never use water.

All electrical equipment on construction sites is potentially deadly.

Electrical extension cords on construction sites are numerous.

Inspect to ensure that:

- All extension cords are three-wire cords.
- The ground pin is on a male plug.
- There is no unbroken insulation on the cord.
- End appliances (plug and receptacle) are gripped to insulation.
- All wires are continuous and unbroken.
- All cords are protected from damage, likely to occur when passing through a door or window.
- Metal boxes with knockouts are not used on extension cords.
- Plugs are dead-front (molded or screwed in place).
- Romex (non-metallic sheathed cable) is not used as flexible cord.
- Cords are not stapled or hung from nails.
- Bushing is passing through holes in covers or outlet boxes.

Check these items:

- Temporary lights are not supported by cords.
- Bulb guards are used on temporary lights.
- Electrical power tools with non-dead man switches have a magnetic restart (when injury to the operator might result if motors were to restart following power failures).
- Provisions are made to prevent machines from automatically

restarting upon restoration of power in place.

- Outlets do not have reversed polarity.
- Power tools are double insulated or have a ground pin.

Guard all of exposed electric of more than 50 volts so no one can come in contact (receptacles, light-bulb sockets, bare wires, load center, switches).

1. Using approved enclosures.
2. Locating them in a room, vault or similar enclosure accessible only to qualified persons.
3. Arranging suitable permanent, substantial partitions or screens so only qualified persons have access to the space within reach of live parts.
4. Locating them on a suitable balcony or platform that is elevated and arranged to exclude unqualified persons.
5. Elevating them 8 feet or more above the working surface.

It's important to take the time prior to beginning work at construction sites each day. The fluid nature of the activities, along with the changing environment and high potential for damage can let these items become a hazard quickly.

Electrical “Ground” Rules

1. **The risk of shock or electrocution is greatest around metal objects and in damp conditions.**
 - make sure all electric equipment, switch enclosures, and conduit systems are properly grounded and that all external or damp operations are wired for wet conditions.
 - When working in damp areas, wear personal protective equipment such as rubber gloves and boots; use rubber mats, insulated tools, and rubber sheets to protect you from exposed metal.
2. **Keep your electrical system in good operating condition.**
 - Damage and injuries can occur when equipment is defective. So, inspect your electrical equipment, outlets, plugs, and cords before each use.

- Remove, tag, and have repaired any faulty equipment. Make sure outlets and cords are of adequate size and length to prevent electric overload.
 - If cords must cross a traffic area, protect them with planks or other means.
3. **Make sure you and other workers follow lockout and tagout procedures.**
- Treat every electric wire as if it were a live one.
 - Stop using a tool or appliance if a slight shock or tingling is felt.
 - Turn off the power if the smell of hot or burning substance is detected or if smoke, sparks, or flickering lights are noticed.
4. **Contact with overhead power supply lines is a frequent electrical-related killer.**
- Workers using high clearance devices should continually be aware of the dangers and take sensible precautions to avoid contact with overhead lines.
 - If an overhead line breaks, keep away from the wire and everything it touches then call the power company to shut off the electricity.
 - Only qualified electricians should repair electrical equipment or work on energized lines.

ARC FLASH – THE STORY

1. Awareness of the risk of arc flashes began to grow significantly as videos of incidents began to be posted online, and studies of security camera footage on offshore and other facilities showed arc flash incidents. The public videos really accelerated the market demand for arc flash safety information. Administration and industry standards groups began seeking to quantify the risk and drive change.

Government-backed research efforts, particularly in **the United States (IEEE standards)** and **Europe (IEC standards)** to investigate arc flashes, also led to the release of technical information and

specific videos showing the damage that arc flashes pose. Once the manufacturing community and industry standards bodies and customers became more aware of equipment dangers, they recognized the need to quantify the risks.

To quantify the risk, manufacturers have begun labeling equipment showing the arc flash energy that could be released at a particular distance. Customers have also begun training employees to understand the labels. If a piece of equipment could emit a certain level of calories per centimeter squared, they have to wear a certain level of protection equipment or deem the equipment non-approachable.

While workers wearing the right protective equipment can still sustain injury, the risk of arc flash associated with new equipment manufactured has been lowered thanks to information now available. **The lowered risk has been made possible by arc-resistant Personal Protective Equipment.**

2. **Prevention of arc flashes really comes down to education**, and helping workers better understand the risks, as well as identifying risk areas for arc flashes and identifying tools that can mitigate this risk. Operators should have an **arc flash mitigation plan** in place both for existing equipment and new projects.

To Prevent Arc Flashes, companies should evaluate their systems for hazards, determine incident energy exposure and arc flash boundaries, and use warning labels to indicate arc flash hazards.

Other steps to take:

- Minimize or preferably eliminate the amount of work done around live equipment.
- Use remote diagnostic and maintenance tools.
- Install devices to reduce energy rather or in addition to containing energy.
- Utilize properly designed and installed equipment for new and existing installations are also critical in mitigating arc flash hazards.

3. As the awareness of arc flash dangers has grown, customers and contractors are standing up and demand change. **North American oil and gas companies** are leading to focus on more awareness of arc flash safety, implementing efforts to address arc flash throughout their operations from workplace safety to the types of equipment they purchase.
-

What Is Workplace Horseplay

INCIDENT

This worker wasn't able to go back to his job after suffering injuries when he was tackled during horseplay. The injured worker sued the employer. Is the employer liable?

Wayne Booth was a truck driver employed as an independent-contract hauler for Southern Hens Inc. in Mississippi.

On oct. 30, 2012, Booth went to Southern Hens to pick up a trailer. While waiting for paperwork, Southern Hens employee Jerome Caldwell grabbed Booth from behind his midsection in a "bear hug." Caldwell shoved Booth against some boxes and pushed him through a doorway onto a stack of pallets.

Booth was told that Caldwell was "Just playing." However, Booth suffered serious injuries to his back that required medical treatment. He wasn't able to return to work due to the injuries, Caldwell was terminated as a result of the incident.

NEED TO KNOW

Horseplay is rough or boisterous play or pranks that occur at the workplace. Horseplay can be activities such as joking that includes physical contact, playing around, racing, grabbing, foolish vehicle operation, social pressure to participate in unsafe acts, harassment, and unauthorized contest. There is

probably at least one on every job – the practical joker – the smart aleck who likes to make a bid for laughs and attention by playing jokes on fellow workers. Playing jokes and having fun with your coworkers may break up the day and make work more interesting, but it can lead to serious injuries and sometimes be deadly.

At one time or other friends play “Practical Jokes” on friends outside the workplace and that are not harmful. There is a world of difference between practical joke outside the workplace and engaging in the definition of workplace horseplay described above.

BUSINESS / REGULATIONS

Booth sued Southern Hens, claiming negligence and failure to supervise and control its employees. Southern Hens filed for summary judgment. A trial court granted the company’s request and threw out Booth’s lawsuit. He appealed.

In reviewing Booth’s case, a Mississippi appeals court noted an employer is liable for an employee’s actions done in the course and scope of his employment. Conduct isn’t considered in the course and scope of employment when it’s not authorized, doesn’t serve the purposes of the employer, or is a “wrongful deed” committed when an employee “abandons” employment.

The appeals court found the trial court correctly found that Caldwell’s conduct in bear-hugging Booth and shoving him into a stack of pallets was outside the course and scope of Caldwell’s employment duties – loading and unloading shipments. Since it’s not within the course and scope of Caldwell’s employment, Southern Hens can’t be liable for it, the court ruled.

Mississippi case law also says a premises owner must protect an invitee from “reasonably foreseeable injuries at the hands of another.”

The appeals court found Caldwell’s actions weren’t “reasonably foreseeable.” The incident occurred without warning in a matter of seconds. Caldwell didn’t have a history of dangerous or violent tendencies at work.

Also, important: Southern Hens' had safety rules that specifically prohibited fighting, physically threatening others, "horseplay," and practical joking. Records showed Caldwell signed a checklist stating he understood horseplay wasn't tolerated.

Therefore, the appeals court upheld the trial court's ruling to throw out Booth's lawsuit.

However, Booth did receive worker's comp benefits for wage replacement and medical treatment from his employer, Whitestone Trucking.

STATISTICS

Each year there are hundreds of injuries in the United States from pulling pranks at work. In some

states horseplay that results in injury can result in criminal prosecution. The courts have held that these injuries are not the result of an accident but are deliberate acts. Workplace horseplay incidents may lead to serious injuries at work, divide the workplace, and prevent employees from getting their jobs done. Making horseplay a part of your workday may jeopardize your health and the future of your business. It's management's responsibility to ensure all employees have access to a safe, respectful, and harassment free place to work.

Example of the Dangers o/Horseplay

Did you know fooling around with air hoses has caused many cases of ruptured eardrums and ruptured bowels?

1. A blast of air under 40 pounds per square inch (psi) of pressure from 4 inches away can rupture bowels or eardrums and cause brain damage.
2. As little as 12 psi can pop an eyeball from its socket.
3. Air can enter the navel, even though a layer of clothing, and inflate and rupture the intestines.
4. If directed at the mouth, compressed air can rupture the lungs.

The consequences of horseplay going “rogue” are illustrated in the following case studies. The takeaway from these hi-lite 3 life changing situations.

- Damage to your career.
- Civil litigation
- Criminal prosecution

Case study #1

Three construction workers began an impromptu race to climb 30 feet of poorly braced scaffolding bars.

Towards the end of the race, the weight of the employees compromised the bracing, and the tower of scaffolding tumbled over.

What happened:

Two of the three employees suffered fatal injuries, and the third was disabled for life.

The incident incurred over one million dollars in collateral property damage and municipal fines.

Criminal charges were brought against the supervisor.

Case study #2

An employee thought it would be fun to use a compressed air nozzle to mess-up the hair of a coworker.

Unfortunately, the coworker unknowingly turned her head putting her ear canal in the direct path of the air gun.

What happened:

The air blew into the coworker's ear, rupturing her eardrum.

The first employee lost his job, and was obligated to pay medical expenses and damages for the three months of hearing loss experienced by his former coworker.

PREVENTION

“An ounce of prevention fetches you a pound of cure.” You have heard this age-old refrain. It is particularly apt when you are talking about eradicating horseplay antics in the workplace.

There ought to be a zero tolerance

Here are 4 ways to prevent workplace horseplay.

1. Horseplay and Fooling Around Are the Opposites of Safe, Responsible Work

According to the dictionary:

- Horseplay means rough fun.
- Fooling around means doing foolish, useless things.
- Fool is a person with little or no judgment or common sense.

2. Workplace Rules Ban Horseplay Because It's Dangerous

Horseplay is usually a friendly, physical way to let off steam. But that type of fooling around is dangerous on the job because:

- When you're fooling around, you're not concentrating on your work.
- Directing your horseplay at others is even more dangerous. They're not expecting the distraction and could easily have an accident such as falling into a moving machine part, slipping on the floor, or dropping a tool.
- Giving less than full concentration and attention to safety procedures makes you less likely to notice or account for hazards until it may be too late.
- Most accidents are caused by unsafe acts—and horseplay itself is an unsafe act.

3. Workplace Horseplay Creates Unnecessary Risks

You can prevent most workplace accidents by being alert to hazards and following safety rules. You can't do either when you indulge in horseplay. Some examples:

- Running, chasing, or pushing can cause slips, trips, falls,

and other accidents. You may:

- Not notice spills or items lying on the floor.
- Crash into, or push someone else into, heavy equipment or moving parts.
- Knock boxes or materials onto a person.
- Knock over open containers of hazardous substances.
- Throwing tools is a frequent cause of injuries. They may:
 - Stab someone with a sharp edge.
 - Hit someone in the head, eye, foot, etc., and cause an injury.
- Fall from a height and hit a person below with tremendous impact.
- Fooling around with PPE can damage it and expose you or another worker to a hazardous substance.
- Speeding or stunt driving with a forklift can cause it to tip over or hit people or objects, possibly injuring the driver or pedestrians.
- Climbing on or under forklift forks or moving crane parts can cause you to get crushed or pushed. It's against the law.
- Running with a hand truck could spill the load on someone or run over feet.
- Pushing, teasing, or otherwise distracting people working with machinery could cause pinch point or other injuries.
- Practical jokes like "hiding" someone's PPE, dropping your half of a load, turning out lights, etc., are not funny—they're dangerous.

4. Take Your Job, Your Responsibilities, and Safety Seriously

- You're responsible for performing your job correctly, which includes safely.
- Safety rules and procedures are designed to protect you.
- Everyone must follow safety rules.
- Failure to follow the rules is dangerous—for you and for others.
- Horseplay and other safety rule violations can lead to disciplinary action.
- Don't indulge in horseplay or accuse those who won't go

along of having “no sense of humor.”

- Think how bad you would feel if your horseplay injured or sickened someone else—maybe seriously.
 - Don’t allow other people to engage you in horseplay.
-

Fatality File: Lead

INCIDENT

A maintenance worker at Republic Steel, an automotive steel manufacturer, suffered severe injuries because the company failed to guard machines and provide lock-out devices, an OSHA investigation found.

The Canton, Ohio-based manufacturer faces \$279,578 in proposed penalties after the agency’s investigators found workers at its plant were exposed to machine hazards and lead.

“Companies must continuously monitor their facilities to ensure health and safety procedures are adequate and effective in protecting workers from injuries and illness on the job,” said Dorothy Dougherty, deputy assistant secretary of labor for occupational safety and health in a statement.

On Dec. 5, 2016, a 64-year-old maintenance worker suffered a fractured pelvis after being struck by a sail – a large clamp that holds the steel billet – because lock-out devices were not affixed to the machine’s operating parts to stop movement during maintenance, OSHA investigators found.

Days later, OSHA opened a second investigation after a complaint alleged worker were being exposed to lead. Agency investigators documented seven incidents of lead overexposure in the caster facility.

In total, the agency found two repeated and five serious safety

and health violations during the two inspections. Among them, the company failed to:

- implement engineering controls to lower exposure to steel dust particulates,
- prohibit employees from eating in areas where lead exposure was possible,
- affix locking devices to machine operating parts during maintenance and
- replace damaged guard and stair rails.

In the past decade, Republic Steel has been cited for more than 250 safety and health violations at its facilities across the country.

NEED TO KNOW

Workers are exposed to lead as a result of the production, use, maintenance, recycling, and disposal of lead material and products. Lead exposure occurs in most industry sectors including construction, manufacturing, wholesale trade, transportation, remediation and even recreation.

Construction workers are exposed to lead during the removal, renovation, or demolition of structures painted with lead pigments. Workers may also be exposed during installation, maintenance, or demolition of lead pipes and fittings, lead linings in tanks and radiation protection, leaded glass, work involving soldering, and other work involving lead metal or lead alloys. In general industry, workers come in contact with lead in solder, plumbing fixtures, rechargeable batteries, lead bullets, leaded glass, brass, or bronze objects, and radiators. Lead exposure can occur not only in the production of these kinds of objects but also in their use (e.g., firing ranges), repair (e.g., radiator repair), and recycling (e.g., lead-acid battery recycling).

In the **general population**, lead may be present in small but hazardous concentrations in food, water, and air. Lead poisoning from [deteriorating old paint](#) is the primary source of elevated

blood lead levels in **children**. **Children** under the age of six are at risk of developing cognitive health effects even at very low blood lead levels. **Pregnant women** or those who might become pregnant must avoid lead exposure because it is toxic to the fetus. Another source of environmental exposure to lead is from workers who take home lead dust on their clothing and shoes.

BUSINESS / REGULATION

Employers are required to protect workers from inorganic lead exposure under OSHA lead standards covering **general industry** ([1910.1025](#)), **shipyards** ([1915.1025](#)), and **construction** ([1926.62](#)). The lead standards establish a permissible exposure limit (**PEL**) of 50 µg/m³ of lead over an eight-hour time-weighted-average for all employees covered. The standards also set an action level of 30 µg/m³, at which an employer must begin specific compliance activities, including blood lead testing for exposed workers. The lead standards also include ancillary provisions such as medical surveillance, exposure monitoring, and hygiene facilities and practices that are critical in preventing lead exposure and elevated blood lead levels.

Lead hazards are addressed in specific standards for general industry, shipyard employment and the construction industry. This section highlights OSHA standards and preambles to final rules.

General Industry ([29 CFR 1910](#))

- [1910 Subpart I](#), Personal protective equipment [[related topic page](#)]
- [1910.134](#), Respiratory protection [[related topic page](#)]
- [1910 Subpart Z](#), Toxic and hazardous substances [[related topic page](#)]
 - [1020](#), Access to employee exposure and medical records
 - [1025](#), Lead
 - [Appendix A](#), Substance data sheet for occupational exposure to lead
 - [Appendix B](#), Employee standard summary
 - [Appendix C](#), Medical surveillance guidelines

[\[related topic page\]](#)

Shipyard Employment (29 CFR 1915)

- [1915 Subpart Z](#), Toxic and hazardous substances
 - [1025](#), Lead. Requirements applicable to shipyard employment under this section are identical to those set forth in [29 CFR 1910.1025](#).

Jobs associated with lead exposure include painting, building renovation, radiator repair, bridge work, demolition, battery manufacturing, metal production, metal scrap cutting and recycling, plumbing, soldering, and ceramic work, according to OSHA.

STATISTICS

The numbers align with OSHA's estimate that 804,000 workers in general industry and an additional 838,000 workers in construction are potentially exposed to lead. OSHA requires employers to protect their workers under standards covering general industry (1910.1025), shipyards (1915.1025) and construction (1926.62). The standards establish a permissible exposure limit of 50 µg/m³ of lead over an 8-hour, time-weighted average for all employees covered. In addition, OSHA established an action level of 30 µg/m³, which marks the level at which employers must initiate certain compliance actions.

In fact, it is often deadly: Around the world, a worker dies from toxic exposure in their workplace every 30 seconds, according to a [2018 UN report](#) published in September by Baskut Tuncak, the United Nations special rapporteur on toxics. Every 15 seconds, a worker dies from dangerous working conditions in general.

In total, around 2.8 million workers globally die from unsafe or unhealthy work conditions per year, according to the report. And diseases resulting from workplaces—like lung cancer linked to inhaling carcinogenic substances on the job—account for around 86% of all premature death.

“In my view, much of what I describe in the report is criminal

conduct,” Tuncak said in his [address](#) to the Human Rights Council.

Cancer is by far the biggest contributor to those deaths, making up roughly 70% of workplace diseases. “Almost all such cancers can be prevented,” the report reads.

“More than 200 different known factors, including toxic chemicals and radiation, have been identified to date as known or probable human carcinogens, and workers are exposed to many of these in the course of their jobs,” the UN report reads. “Debilitating and fatal lung diseases, neurological disabilities, and reproductive impairments such as infertility and inability to carry a pregnancy to term are among various other health impacts that plague workers exposed to toxic substances.”

Lead poisoning has impacted the safety and health of children in the U.S.

According to Centers for Disease Control and Prevention (CDC), an estimated 250,000 U.S. children have blood lead levels high enough to cause significant damage to their health. Major sources of lead exposure among U.S. children are lead – based paint and lead – contaminated dust found in the deteriorating buildings.

Lead poisoning has its deadly tentacles everywhere in society.

PREVENTION

Workers are primarily exposed to lead by breathing in particles containing lead. Lead compounds can also get on the skin, contaminate clothing or food, and be ingested. The most effective way to prevent exposure to a hazardous material such as lead is through elimination or substitution with viable, less toxic alternatives. The hierarchy of controls describes the order that should be followed when choosing among exposure-control options for a hazardous substance. **Generally, elimination or substitution is the preferred choice (most protective) at the top of the hierarchy, followed by engineering controls, administrative controls, work-practice controls, and, finally, personal protective equipment (PPE).** Engineering controls include isolating the exposure source or using other engineering methods, such as

local exhaust ventilation, to minimize exposure to lead. Administrative controls usually involve logistic or workforce actions such as limiting the amount of time a worker performs work involving potential exposure to lead. When exposure to lead hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices and other forms of administrative controls cannot provide sufficient additional protection, a supplementary method of control is the use of protective clothing or equipment. This is collectively called personal protective equipment, or PPE. PPE may also be appropriate for controlling hazards while engineering and work practice controls are being installed. PPE includes wearing the proper respiratory protection and clothing. **Good housekeeping practices** prevent surface contamination. Hygiene facilities and practice protects workers from ingesting and taking home lead are also necessary to prevent exposure to lead.

Other:

Employers also must follow several other requirements from OSHA if their workers are exposed to lead. The requirements are intended to protect workers during their shifts, as well as prevent them from tracking lead home and potentially putting family members at risk. These requirements are:

- Test workplace air for lead and test blood-lead levels in workers.
- Inform workers if their job involves exposure to lead, and provide proper training if that is the case.
- Establish controls for lead dust and fumes in the workplace.
- Provide protective clothing and equipment for workers in exposed areas.
- Give workers a place to wash their hands and shower after a shift.
- Provide workers with a place to change into clean clothes, and ensure work clothes are kept away from street clothes.

Despite the continued presence of lead in the environment, however, lead poisoning is entirely preventable.

To increase awareness of childhood lead poisoning prevention, CDC, EPA and the U.S. Department of Housing and Urban Development, along with local health departments, are participating in NLPPW, with events such as state proclamations, free screenings, lead-awareness community events and educational campaigns conducted nationwide.

Parents can reduce a child's exposure to lead in many ways. Here are some simple things you can do to help protect your family:

- **Get your home tested.** Before you buy an older home, ask for a lead inspection.
 - **Get your child tested.** Even if your young children seem healthy, ask your doctor to test them for lead.
 - **Get the facts!** Your local health department can provide you with helpful information about preventing childhood lead poisoning.
-

Trenching and Excavation Fatality

INCIDENT

A 22-year-old man was killed when the 14-foot-deep trench in which he was working collapsed and buried him beneath tons of soil and debris.

Carlos Moncayo of Queens was working on the construction of a Restoration Hardware store in Manhattan on April 6, 2015, when he was killed on the job.

Carlos was the 18th construction worker to die in the job in 2015 in New York city.

NEED TO KNOW

An excavation is any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal. Trench is a narrow excavation (in relation to its length) made below the surface of the ground.

In general, the depth is greater than the width.

BUSINESS / REGULATIONS

In an investigation, OSHA found that the project's general contractor, Harco Construction LLC of New York City, and Moncayo's employer, subcontractor Sky Materials Corp. of Maspeth and Calverton, did not provide cave-in protection for the trench or support or brace a section of undermined and unsupported sidewalk to prevent it from collapsing into the trench.

"Carlos Moncayo was a person, not a statistic. His death was completely avoidable. Had the trench been guarded properly against collapse, he would not have died in the cave-in," said Kay Gee, OSHA's area director in Manhattan.

"Managers from Harco and Sky Materials were aware of these deadly hazards and did not remove employees from the trench, even after warnings from project safety officials. This unconscionable behavior needlessly and shamefully cost a man his life."

OSHA issued each employer two citations for willful violations of workplace safety standards and assessed fines of \$140,000 – the maximum fines permitted – for each company.

In addition to the OSHA citations, officials from both companies were indicted for manslaughter, among other charges on Aug. 5 in New York State Supreme Court.

OSHA further opined.

"Construction work hazards are well-known, and so are safeguards to prevent deaths and injuries. Employers must provide a workplace that allows employees to return home safely at the end of each workday."

STATISTICS

In 2003, OSHA conducted an investigation because there were 48 trench fatalities.

Because of these steps with more information of trench hazards and stepped up enforcement the annual trench fatalities declined. But fatalities still occur.

The results of OSHA's investigation are useful in understanding why trench fatalities **still occur** and how to avoid them.

1. Main Reason

- Trenches collapse because they are not properly protected.
- Protective systems were properly employed in only 24 percent of the trenches. In the remainder, a protective system was either improperly used (24%), available but not in use (12%) or simply unavailable (64%).

2. Competent Person

Further, despite the fact that environmental conditions were a contributing factor in 68 percent of the fatalities, the competent person was not onsite when the fatality occurred 86 percent of the time. Most of the time (65%) the employer had not identified the soil type even though soil type is a factor in trench cave-ins.

3. Mondays

Also, a disproportionate number of fatalities (36%) occurred on Mondays, probably because rain or other factors changed conditions over the weekend. Under OSHA regulations, the competent person must inspect trench work in progress before each shift and after any changes in conditions.

4. Schedule/Deadlines Times

The OSHA investigations showed that schedule time was more important than safety in 88 percent of the incidents. Seventy-two percent of the fatalities occurred in trenches less than nine feet deep. Only nine percent occurred deeper than 15 feet.

5. Trades/Fatalities

The most commonly killed employees were construction laborers (53%), with plumbers and pipe fitters following next at nine percent. Most (58%) were killed while installing pipe.

6. Nationalities/Fatalities

Fifty-six percent of these fatalities were Hispanics, and 52 percent were foreign-born. For 44 percent, Spanish was their primary language. At least 30 percent had been working for their employer for less than a year, and most (59%) worked for a subcontractor.

7. Union vs Nonunion

Only six percent were union members. Since, nationwide, about 20 percent of construction work is union, the expected rate of union fatalities would be near 20 percent. The lower rate suggests that union jobs are safer, that supervisors and workers on union sites are better trained and that the union offers the kind of protection that workers need to speak up about safety issues on the worksite.

8. Written safety/health program and safety training

Just over half the employers had a written safety and health program, but, of these, only 40 percent covered trenching. Sixty-five percent provided no trench safety training. Most employers (71%) had never been inspected by OSHA, but 21 percent had been previously cited by OSHA for trench safety violations.

9. Type of worksite/Company size

About three in every four fatalities occurred at residential worksites. Most companies were small; 42 percent had fewer than ten employees. Though, typically, five or less workers were present on the site when the incident occurred, most of the projects (52%) involved contracts worth \$100,000 or more.

PREVENTION

“An ounce of prevention will yield a pound of cure”

The following is a 10 Point Work Plan for Excavation and Trenching for managing and maintaining safe excavation work.

1. Regulatory Requirements

All employers must provide a workplace free of recognized hazards that may cause serious injury or death. As a supervisor you must understand and follow regulatory requirements for trenching and excavation work.

2. Designate Competent Person/Persons

A competent person is someone designated by the employer, who can identify existing and predictable hazards or working conditions which are hazardous or dangerous, and who is authorized to take prompt corrective measures to eliminate them.

3. Determine Soil Type

Excavation work is dangerous, and a hazard assessment must be done before any excavation or trenching work is started. This assessment begins by determining the type of soil. A competent person must determine the soil type using visual and manual tests.

The entire excavation site, including soil adjacent to the site, will be checked for tension cracks, indications of layered geologic structuring on the open side of the excavation, signs of bulging, boiling, or sloughing, as well as signs of surface water seeping from the side of the excavation or from the water table.

Moisture content also affects soil strength. Once opened, the moisture content of the soil begins to change almost immediately. This can affect the strength of the walls. The longer an excavation is left open the greater the risk is for cave-in.

4. Identify and Remove Sources of Vibration

Vibrations from nearby equipment, machines, vehicle traffic, and operations such as earth moving, compactions, pile driving, and blasting can all affect the stability of the excavation and contribute to the collapse of excavation and trench walls.

Place barricades to keep unnecessary equipment out of the excavation area.

5. Location of Spoil Piles

Excavated soil, equipment and other material located next to an excavation puts pressure on the excavation's walls and can lead to cave-in. It can also lead to equipment or soil falling into the excavation and onto workers.

Keep soil and equipment at least 1 meter (2 feet in the US) away from excavation and trench edges.

6. Access and Egress

Whether protected by sloping, boxes, or shoring, trenches must be provided with ladders so that workers can enter and exit safely. Ladders must:

- Be placed within the area protected by the shoring or trench box.
- Be securely tied off at the top.
- Extend above the shoring or box by at least 1 meter (3 feet).
- Be inspected regularly for damage.

7. Protective Systems

Designing a protective system requires consideration of many factors, including: soil classification, depth of cut, water content of soil, weather and climate, and other operations in the vicinity.

- Sloping and benching the sides of the excavation;
- Supporting the sides of the excavation; or
- Placing a shield between the side of the excavation and the work area.

8. Preplanning

Waiting until after the work starts to correct mistakes in shoring or sloping slows down the operation, adds to the cost of the project, and makes a cave-in or other excavation failure more

likely.

Before preparing a bid, you should know as much as possible about the jobsite and materials needed to perform work safely and in compliance with safety standards. Factors to consider:

Traffic

- Proximity and physical condition of nearby structures
- Soil classification
- Surface and ground water
- Location of the water table
- Overhead and underground utilities
- Weather
- Quantity of shoring or protective systems that may be required
- Fall protection needs
- Number of ladders that may be needed
- Other equipment needs

9. Inspections

A competent person must inspect excavations, adjacent areas, and protective systems daily for possible cave-ins, indications of failures in protective systems and equipment, hazardous atmospheres, and other hazardous conditions.

Inspections must be done prior to the start of work and as needed throughout the shift and are required after natural events, such as rainstorms, or other hazard-increasing occurrences, such as blasting work.

10. Training

Any worker who has a part in any excavation work must be trained on the procedures and responsibilities they have for working safely in excavations and trenches. This includes the competent person, supervisors, equipment operators, and the workers down in the excavations.

Warehouse Woes

INCIDENT

Amazon the world's largest retailer with a gigantic warehouse system, has left workers suffering from workplace accidents and injuries that left them homeless, unable to work and bereft of income.

The following are stories from real people who were initially excited by the idea of working for one of the fastest growing corporations in the world. That feeling dissipated quickly for these people.

Vicky Allen, aged 49 started working at Amazon as a counter in a warehouse at Haslet, Texas in May / 17.

Vicky Allen injured her back-counting goods on a workstation that was missing a brush guard, a piece of safety equipment meant to prevent products from falling onto the floor. She used a tote bin to try to compensate for the missing brush guard, and hurt her back while counting in an awkward position. The injury was the beginning of an ongoing ordeal she is still working to amend at Amazon. Over the course of a few weeks, Amazon's medical triage area gave her use of a heating pad to use on her back, while Amazon management sent her home each day without pay until Allen pushed for workers compensation.

"I tried to work again, but I couldn't stretch my right arm out and I'm right-handed. So I was having a hard time keeping up. This went on for about three weeks," Allen said. Despite not getting paid, Allen was spending her own money to drive 60 miles one way to the warehouse each day just to be sent home.

Once on workers compensation, Allen started going to physical therapy. In January 2018, she returned to work and injured herself again on the same workstation that still was not fixed.

Allen went back on medical leave and took an additional two weeks of unpaid leave because she didn't have the money to drive to work. In April 2018, an MRI scan showed her back was still injured, but just five days after her diagnosis, she claims Amazon's workers compensation insurer, Sedgwick, had the company doctor drop her as a patient.

"By June 2018, they finally had that station fixed. It took them eight months to put one little brush guard on this station," Allen said. On 2 July, she met with management at the Amazon fulfillment center, who offered her a week of paid leave for the issues she had to deal with over the past nine months.

"They're also going to pay me for 24 more hours for last week. They haven't said anything else," Allen explained. "They offered me a buyout, only for \$3,500, which meant I would have to sign a non-disclosure agreement to not say anything derogatory about Amazon or my experience."

In April 2018, 43-year-old Bryan Hill of Seffner, Florida [filed](#) a lawsuit against Amazon, alleging managers fired him for hurting his back on the job and failed to file a workers compensation claim once his injury was reported. "It's been scheduled for mediation in September, and we're in a holding pattern until then," said Miguel Bouzas, the attorney representing Hill in the lawsuit. According to the lawsuit, Hill was told by a manager he was too young to have back problems, and he was fired before Amazon Human Resources would authorize a doctor visit.

At an Amazon Fulfillment Center in [Pennsylvania](#), one former employee was fired five weeks after getting injured on the job. "I was on a ladder and someone came flying into the area I was in, hit the ladder causing me to fall, and I landed on my back and left leg," said Christina Miano-Wilburn. Her back is permanently injured from the incident. "They refused to give me the paperwork for workmen's comp. They cut my short-term disability after five weeks. I was supposed to get it for 26 weeks."

Lindsai Florence Johnson, who was taken away in an ambulance in April during a hot day while working at an Amazon fulfillment

center in San Bernardino, California. She had succumbed to fatigue and exhaustion the fulfillment center work environment. "I felt they thought and I was faking. I was dehydrated and dizzy."

Michael Yevtuck has been in and out of court over a worker's compensation claim against Integrity Staffing, who hired him to work in a Robbinsville, New Jersey based Amazon fulfillment center.

"I was squatting full speed and going up the step ladder as many times as I could an hour to try to hit the rates. All that squatting hurt my left knee, so I favored the other one and hurt that one," said Yevtuck, who hurt his knees in November 2015.

An Amazon company doctor recommended he return to work on light duty and gave him braces for each knee. Yevtuck provided documents corroborating his medical diagnoses from Amazon company doctors and private doctors. "As soon as I came back, the supervisor returned me back to a job that was full duty and I reinjured both knees."

He added Amazon told him to return to work, or work a light duty job if he signed a form stating his injuries occurred prior to working at Amazon. An MRI he received in April 2016 from a private doctor noted he tore the meniscus in his left knee, but Amazon would not pay his medical fees or accept his workers compensation filing.

NEED TO KNOW

Amazon warehouses were listed on the National Council for Occupational Safety and Health's "dirty dozen" list of most dangerous places to work in the United States in April 2018. The company made the list due to its pattern of unsafe working conditions and its focus on productivity and efficiency over the safety and livelihood of its employees. Amazon's emphasis on fulfilling a high demand of orders has resulted in unsafe working conditions for its warehouse employees.

BUSINESS / REGULATIONS

Amazon is now the world's most valuable retailer. Its customers are served by over 140 fulfillment centers like the one where Vicky Allen worked across the US. The revenues from these centers have made founder Jeff Bezos the world's richest man, according to the Bloomberg Billionaires Index.

Amazon has 60 billion a year in retail sales. Amazon frequently utilizes temporary and contract employees to reduce costs and abilities associated with full time staff, including health insurance, retirement pay and workers compensation.

Amazon meanwhile insists that ensuring the safety of its workers is a priority and that it was "proud" of its record.

"Amazon has created over 130,000 jobs in the last year alone and now employs over 560,000 people around the world. Ensuring the safety of these associates is our number one priority," said Amazon spokesperson Melanie Etches in an email, who also pointed to the firm's Safety Leadership Program as an example of being proactive on the issue.

"Operational meetings, new hire orientation, process training and new process development begin with safety and have safety metrics and audits integrated within each program ... While any serious incident is one too many, we learn and improve our programs working to prevent future incidents," Etches said.

The aforementioned former employees of Amazon reveal some of the impact of Amazon treatment of its employees.

- **Vicky Allen** rejected the buyout offer of 3500.00 to speak out against Amazon's treatment of her. She currently lives out of her car in the parking lot of the Amazon fulfillment center. "They cost me my home, they screwed me over and over and I go days without eating."
- **Bryan Hill** was told by a manager he too young to have back problems, and he was fired before Amazon human resources would authorize a doctor visit.
- **Christina Miano-Wilburn** was notified of her job termination through a letter in the email in May 2017 after working at

Amazon for two years. She lost her home shortly after being fired from Amazon.

- **Lindsai Florence Johnson** quit in May 2018 over mistreatment after starting in June 2017. “Not all people report injuries because they are scared to get taken off their job or told they can’t work over three anymore. I have many times come home with bruises from work at Amazon and Experienced my first hernia there.”
- **Michael Yevtuck**

Amazon workers like Michael are left to deal with the temp agency that hired them, shifting the burden of responsibility to a third party and making it more difficult for workers to receive proper treatment and compensation.

STATISTICS

New report issued by the National Council for Occupational safety with Health, a private non-profit workers advocacy group delivered findings Amazon’s record in the workplace relevant to safety.

- Amazon workers suffer injuries in a work environment with a relentless demand to fill orders and close monitoring of employee actions.
- Seven Amazon workers have died on or near the job since 2013.

The seven workers at Amazon who lost their lives were involved in several different kinds of accidents and crashes. According to the report, two were crushed by forklifts in the warehouses, one was run over by a truck, one was killed by an SUV driver, one suffered a fatal heart-related event during an overnight shift, one was dragged and crushed by a conveyor belt, and one was killed and crushed by a pallet loader.

- Amazon was named or one of NCOHS’s “dirty dozen” companies on a not so famous list.
- Criteria for inclusion included severity of injuries to workers; exposure to unnecessary and preventable risk; repeat citations by relevant state federal authorities.

PREVENTION – “AN OUNCE AND A POUND”

If safety procedures and workplace hazards are disregarded in warehouses to cut cost, it exposes workers to serious risks of accident, injury and death.

To prevent this from occurring, the following must be implemented:

- Provide worker training on hazard awareness.
- Conduct periodic safety inspections.
- Implement safety measures.
- Instill a mentality of vigilance in the mindset of the workplace.

Here are some common warehouse safety Hazards and Safety tips to ensure safety in the warehouse.

Hazard 1. Forklift

Forklifts are critical pieces of equipment used in warehousing and storage facilities. However, when operated incorrectly can cause serious damage to operators, nearby workers and property. Unsafe use of forklifts is the [most often cited hazard in warehousing operations by OSHA](#).

- Ensure all forklift operators are competent and have completed certified training. Perform regular refresher training and evaluation when an operator is observed operating the vehicle in an unsafe manner.
- [Perform daily pre-start forklift equipment inspections](#) to check for controls and equipment damage.

Hazard 2. Docks

One of the worst accidents a worker could suffer when working in a warehouse is being pinned or crushed between a forklift truck and the loading dock. This can typically occur when a forklift runs off the dock and strikes a person.

- Forklift operators must be attentive and drive slowly on dock plates, make sure dock edges are clear and safe to support loads.

- Always ensure that warning signs and mechanisms are in place to prevent people from getting near docks.

Hazard 3. Conveyors

Conveyor equipment is commonly used in warehouse facilities to transport goods. However, conveyors pose serious dangers to workers including getting caught in equipment and being struck by falling objects.

- Ensure proper [safeguarding equipment](#) between the conveyor and the worker to protect against entanglement of clothing, body parts and hair.
- Follow proper [lock out tag out procedures](#) during conveyor maintenance and repairs.

Hazard 4. Materials storage

Improper stacking of loads and storage of materials in shelves can result in unintended slip and trip hazards for nearby workers.

- Keep aisles and passageways clear and in good condition, this prevents workers from slipping, tripping, or falling.
- Loads should be placed evenly and properly positioned, heavier loads must be stacked on lower or middle shelves. Always remember to remove one load at a time.

Hazard 5. Manual Lifting/ Handling

The most common cause of physical injuries in warehouse and storage facilities involves improper manual lifting and handling. Manual lifting or handling can cause musculoskeletal disorders if done with awkward postures, repetitive motions, or overexertion.

- Plan ahead and determine if the need for lifting can be minimized by applying good engineering design techniques.
- Observe proper ergonomic posture when carrying or moving loads. If products are too heavy, ask assistance from a co-worker.

Hazard 6. Hazardous Chemicals

When handling hazardous chemicals in your warehouse or storage facilities, a hazard communication program should be implemented. Your hazard communication program should cover effective training on identifying chemical hazards, proper handling, storage, and disposal of chemicals, and the use of appropriate PPE.

Hazard 7. Charging Stations

Charging stations in warehouse facilities are used to refuel or recharge all powered equipment to function. Units may be powered by gasoline, liquid petroleum gas (LPG), or battery. If proper guidelines are not followed, fires and explosions can occur.

- Charging stations should be away from open flames. Smoking should be prohibited. [Fire extinguishers should be available](#) and in good working condition in case of fire.
- An adequate ventilation system must be installed to disperse harmful gases. [Proper PPE should be worn](#). Eye washing and shower facilities should be present should employees get exposed to acids and chemicals.

Hazard 8. Energized Equipment

A Lockout/Tagout (LOTO) program must be implemented in all warehouse operations to ensure that all energized equipment is properly shut off and prevent employees from being caught between mechanical parts or being electrocuted. All affected workers must be trained on LOTO procedures and how to apply and remove LOTO devices after performing maintenance.

Accidents do not appear magically in the workplace. Accidents are caused by action or lack of action of people in the workplace.

Most accidents in the workplace are preventable. All of the preventable action outlined is preferable to:

- Workers compensations claims
- Business down time
- Loss of wages of employees
- Dislocation in workplace
- Increased insurance costs

- Medical and legal costs
- Regulatory issues
- Physical injury, illness and even fatalities of workers.

An ounce of prevention yields a pound of cure. The benefits of taking preventative action for workplace safety far outweighs the negative issues associated with workplace accidents that result in illness, injury and death.

Stress Risk Factors

INCIDENT

TRAVELLING through New York on a train, Catherine Plano suddenly felt as though the carriage was caving in. She couldn't breathe, her hands felt numb and she lost all sensation in her legs. The high-flying Melbourne executive and mother was convinced she was dying.

Catherine feels ridiculous recounting her visceral fear now, but while she wasn't having a heart attack, that moment changed things for her forever.

"Everything was closing down, the sound was muffled," she said. "Everything was drawing in on me, I couldn't get my breath in. You don't get enough oxygen."

The panic attacks continued for another six months, to the point where she couldn't leave the house. "It was probably one of the darkest times of my life," she said.

"I was very depressed. I didn't want to leave the house or my husband.

"I'd be waking in the middle of the night with a panic attack. I'd be crawling on the floor.

"There's a stigma attached. I was really scared it would happen in public. It was shame. It cripples you."

Catherine had brought her son Jordan up alone, so to have to rely on new husband Andoni was a shock. "I was a single mum, independent, to have someone look after me, I was really embarrassed. And he saw me in a different light, he didn't see me as a strong woman, he saw me as a weak, frail thing."

Catherine was a victim of Australia's workplace stress crisis, putting in longer and longer hours at the expense of her mental health, pushing herself to the point that she had developed chronic anxiety.

NEED TO KNOW

There are no conveyor belts, forklifts or swing booms lurking in the sky. All you can see are people sitting at work stations with their heads down at working away on their computers. But there is danger in this workplace scene. There is a deadly workplace crisis which is seething and swirling in epidemic fashion.

The pressure is mounting on the daily lives of workers with a cocktail of stress, financial issues, job insecurity and isolation. Workers are being killed.

BUSINESS / REGULATIONS

A massive 20 per cent of suicides are linked to work.

It is one of the most critical threats to society – damaging our health and relationships, costing the economy and endangering our lives. Mental health conditions such as depression and anxiety cost billions.

But still we do not always treat these issues with the necessary gravity.

Part of the problem is "optics". A person with a broken arm has a difficult time lifting objects so you can understand that person needs help to lift things. But mental illness is invisible and people can hide.

There are people who have developed severe work-related mental health disorders, contemplated suicide or loved someone who took their own life because of a job. Researchers address this so-called “modern epidemic”.

The research shows there are a number of clear risk factors in a job that lead a person to develop mental health issues and potentially attempt suicide.

Three main risk factors are:

- Job strain. A combination of a psychologically demanding workplace, combined with employees not having much control over what they do minute to minute, day to day.”

Job strain can involve a lack of resources, engagement, exposure to extreme stress and long hours.

- Then there’s a lack of respect or value. This could involve being bullied, sexually harassed or ignored. Bosses who are not open or fair in their decision-making can generate feelings of resentment and misery in employees.
- The third major factor is occupational uncertainty. Workers whose jobs are insecure are likely to be under more stress than others, particularly if finances are an issue. During the global financial crisis in 2008, as concerns over job security soared, deaths by suicide increased by almost 5000 across the developed world.

Job insecurity partially explains why low-paying contractors are at more risk of suicide than others. Other jobs with elevated rates of suicide are doctors, nurses, vets, lawyers and bankers. This is attributed to high demand, long hours, hierarchy, gender norms and – in the case of medical professions – daily trauma and access to the means to take your life.

Poor mental wellbeing is typically the result of a combination of individual vulnerabilities, social factors and environmental triggers. Men are more at risk than women, and people living in rural areas are at more danger of suicide.

A difficult work situation could exacerbate other issues in someone's life – whether a relationship breakdown, financial stress, bereavement, genetic predisposition to depression, substance abuse, isolation or sexual harassment.

Suicide has a massive ripple. Numbers don't really provide a true indication of how much suicide really affects workers and people around them.

Catherine now makes her mental health a priority, using meditation, writing and a healthy lifestyle to shift her thinking. She also speaks openly about her struggles with anxiety, and says the number of people coming forward with their own stories only seems to be growing.

"I look on it as a gift," said executive Catherine, now a successful speaker and author, who still occasionally suffers panic attacks. "Life is completely different. Health hadn't been a priority. I was a single mum, a workaholic.

"I had all this pressure, I felt overwhelmed. You love what you do, you just keep pushing it."

She now makes a point of switching off at 8.30pm, putting her phone in her study and not taking it out until after she has had eight hours sleep and meditated in the morning. She avoids her panic triggers, which include news stories about mothers getting shot in front of their children.

"How often do we get time out to pause?" she said. "We live in a fast-paced environment, not conscious of what we're thinking about, emotions are high, you're contactable all the time.

"Now I take a full day out, on Sunday I do things I love to do, I plan it in diary or it doesn't happen. I take time off."

STATISTICS

The workplace was the fifth leading cause of death in the US, responsible for some 120,000 deaths and approximately \$190 billion in additional costs each year (Centers for Disease Control and

Prevention). Work is [one of the leading causes of stress](#), and the [physiological effects of stress](#) on blood chemistry, including cholesterol levels, the immune system, and metabolic functioning have been well-established.

This represents 5% to 8% of national health care spending derived primarily from high demands at work (48 billion) lack of insurance (10 billion) and work – family conflict (24 billion)

The Centers for Disease Control and Prevention research:

- From 2000 to 2016, the U.S. suicide rate among adults ages 16 to 64 rose 34 percent, from 12.9 deaths for every 100,000 people in the population to 17.3 per 100,000.
- The highest suicide rate among men was for workers in construction and mining jobs, with 43.6 deaths for every 100,000 workers in 2012 and 53.2 deaths per 100,000 in 2015.
- The highest suicide rate among women was for workers in arts, design, entertainment, sports and media, with 11.7 fatalities for every 100,000 workers in 2012 and 15.6 deaths per 100,000 in 2015.

PREVENTION

We have seen from statistical studies how excessive stress in the workplace impacts business, employees, economy, and the community at large. There is a growing recognition that workplace stress is not “hidden epidemic”

Workplace stress can significantly impact the bottom line; however, it can also be managed to improve productivity, employee health and to create a more positive workplace climate and culture.

Preventive STEPS – “What to do:”

- Training for leaders and supervisors on effective ways to reduce stress;
- Working with employees to create challenging but realistic goals for optimal performance;
- Communicating clearly and managing conflicts respectfully;

- Identifying and using employees' strengths and skills for career advancement;
- Compensating fairly;
- Ensuring safe work conditions;
- Modeling work-life balance;
- Building in opportunities to formally recognize individual and team goal achievement;
- Creating a work climate that encourages social support and connectedness; and
- Developing ways to reflect on positive daily workplace events and accomplishments.

Adopting effective stress reduction strategies also holds promise in preventing depression which can be costly to employers.

Targeted early identification and intervention level: offer employees the following options:

- Stress screenings and information on stress reduction and the early warning signs of mental health conditions;
- Effective intervention programs like cognitive-behavioral therapy for stress management;
- Programs that effectively address stress like mindfulness, relaxation, yoga and tai chi and encourage exercise, emphasizing the value to mental and physical health; and
- Programs that improve resiliency.

Web-based and mobile stress management programs offer employers cost-effective options for reducing workplace stress.

Intensive individualized support level:

- Assist employees in accessing effective care and supports;
- Initiate active outreach to employees out on disability;
- Support employees in remaining engaged with supervisors and co-workers;
- Develop effective transition and return to work policies and practices; and
- Consider ADA accommodations that help employees stay on the job.

Early detention and management of workplace stress can positively affect all the stakeholders.

It is comfortable to draw the conclusion that preventive action at the outset clearly “Trumps” billions spent later on in the process and underscore the well – worn refrain that “an ounce of prevention fetches a pound of cure.”

Drugs and Alcohol

INCIDENT

At approximately midnight, a worker was attempting to repair a leak in a hydraulic cylinder of a newly installed washer in a commercial laundry plant.

Leaning under the machine, he attempted to unhook a hydraulic hose, which was connected to the system that held the machine up. As soon as it was disconnected, the machine crashed down on him, pinning his head and upper torso and killing him immediately.

His co-workers unsuccessfully attempted to jack up the machine and then called for emergency assistance.

A thorough examination of the offending washing machine was undertaken and it was found to be completely free from any structural defects. As well, there is a clear warning posted on the back of the machine indicating three safety measures to implement prior to commencing any repairs.

An investigation revealed that none of these safety precautions were in place at the time of the incident. As well, there was evidence that the worker was consuming alcohol in the hours prior to the fatal event.

It is not known why the victim did not adhere to the specified warnings before commencing work on this machine. He may have been

tired from working a long shift and anxious to complete the final adjustments and go home.

It is likely that since it was reported that he had been consuming alcohol in the hours prior to the fatal event that his judgment was impaired by the consumption of alcohol.

NEED TO KNOW

Drugged driving is on the rise – nearly matching drunk driving in the number of fatal crashes – according to a 2015 from the **Governors Highway Safety Association and the Foundation for Advancing Alcohol Responsibility.**

The study revealed that 40 percent of drivers killed in crashed in 2013 tested positive for illegal, prescription or over-the-counter drugs. The figure was nearly the same as the percentage of drivers killed in crashes the same year who tested positive for alcohol in their bloodstreams.

Researchers unearthed some revealing facts the majority of drugs which include prescription medication:

- Impairs driving related cognitive functions as reaction time, distance perception, motor skills.
- Drug use combined with alcohol increases the risk of a crash.
- An individual doesn't have to be staggering around drunk or having hallucinations to be dangerously impaired. Even the drowsiness or slowed reaction time caused by common medications can result in deadly accidents, both on the job and on the road.
- Just because a drug is legal to use does not make it safe to use in the workplace. We're talking about prescription and over-the-counter drugs. We all know that illegal drugs such as marijuana or cocaine are hazardous to use. We also know that alcohol is prohibited at work because it is intoxicating. But did you know that many other drugs that we take for granted can also affect your ability to do your job safely?

- Drugs such as cold remedies often carry a warning advising that you do not drive or operate machinery if you feel drowsy. Many of these mixtures contain antihistamines, which reduce some of the unpleasant effects of a cold, but can also make you sleepy. Cough syrups contain a variety of drugs which, if taken in enough quantity, can cause impairment of your judgment and reflexes. Painkillers work because they dull your senses—the same senses you need to stay alert while you are working. Tranquilizers can calm you down, but in the process they can make everything seem fuzzy.

Substance abuse costs employers billions of dollars a year in accidents and injuries, lost productivity, and property and equipment damage. From a worker perspective, working with someone who is under the influence of drugs or alcohol puts co-workers in danger and generally has a negative effect on their morale and job performance.

Addiction is the irresistible compulsion to use alcohol or drugs despite the negative consequences their use can cause. Substance abuse is the legal or illegal, recreational or addictive misuse of illegal drugs, over the counter or prescription drugs, or alcohol.

Abused substances always produce some form of intoxication that alters judgment, perception, attention, or physical control. This makes abusers dangerous in and out of the workplace. People who abuse drugs or alcohol are three and a half times more likely to be in a workplace accident compared to individuals who do not abuse drugs or alcohol. In a recent study, 47% of industrial injuries are directly related to alcohol abuse or alcoholism.

BUSINESS / REGULATIONS

There are federal laws that provide guidelines on the policies employers can set regarding drug and alcohol abuse in the workplace. Employers can prohibit the use of drugs and alcohol, [test for drug use](#), and fire employees who are engaging in illegal drug use.

The regulations are typically listed in the organization's drug and alcohol abuse and prevention policy. The guidelines may include information on when the company tests for drugs and alcohol, as well as on the consequences of failing a test. The law also provides protection for employees with substance abuse problems and outlines the accommodations that the employer must provide for workers.

In addition to federal law, there may be state laws that regulate employment drug and alcohol testing, and how employers can handle substance abuse problems.

Workplace Substance Abuse Laws and Regulations

The **Americans With Disabilities Act (ADA)** and the **Rehabilitation Act of 1973** both affect [drug and alcohol policies](#). The following outlines aspects of the ADA and the Rehabilitation Act of 1973 and some state statutes that relate to employees with drug and alcohol issues:

- Employers can prohibit the illegal use of drugs and the use of alcohol in the workplace.
- Testing for illegal use of drugs does not violate the ADA (but must meet state requirements).
- Pre-employment testing is often restricted by states to candidates who have already been offered a job. Typically, all candidates need to be treated equally and no individual can be singled out for testing.
- Many states require employers to verify a cause for testing currently employed workers for substances. Employers in those states must have a reasonable suspicion that the employee in question is abusing drugs and that safety or performance has been compromised. Some states can randomly test workers without reasonable suspicion. This practice is usually restricted to situations where safety issues are a concern.
- Employers may discharge or deny employment to those who currently engage in the illegal use of drugs.

- Employers cannot discriminate against drug addicts who have a history of drug addiction or who are not currently using drugs and have been rehabilitated (or who are currently in a rehabilitation program).
- Reasonable accommodation efforts, such as permitting time off for medical care, self-help programs, etc., must be extended to drug addicts who have been rehabilitated or who are undergoing rehabilitation.
- An alcoholic may be determined as an “individual with a disability” under the ADA.
- Employers may discharge, discipline, or deny employment to alcoholics whose use of alcohol hinders job performance or behavior to the same extent that such actions would result in similar disciplinary action for other employees. Employees using drugs and alcohol must meet the same standards of performance and behavior as other employees.
- The ADA does not protect casual drug users. However, those with a record of addiction, or who are falsely deemed to be being addicts, are covered by the Act.

STATISTICS

Drug and alcohol abuse lead to workplace accidents. According to OSHA, “Of the 17.2 million illicit drug users aged 18 or older in 2005, 12.9 million (74.8 percent) were employed either full or part time. “In addition, they found that 10-20 percent of work-related fatalities test positive for drugs or alcohol.

Despite the numerous safety protocols at the workplace, 40% of all industrial workplace fatalities are caused by substance abusers. And individual who is inebriated or hungover has decreased productivity and alertness. This means workplace accidents are more likely to happen. Workplace accidents caused by inebriation or a hangover is five times more likely to injure someone. Substance abusers are ten times more likely to miss work, negatively impacting themselves and others by jeopardizing their jobs, their health and safety as well as co-workers.

The rate of positive drug tests rose by double digits in five of 16 major U.S. workforce industry sectors from 2015 to 2017,

according to a recent analysis done by researchers at Quest Diagnostics

Quest Researchers found that from an examination of data from more than 10 million urine drug tests conducted over the three-year period showed that transportation and Warehousing had the largest increase, at 21.4 percent, followed by other services except Public Administration (15.4 percent), Finance and Insurance (13), tail trade (12.8), and Wholesale Trade (11.8).

Quest found that the highest positivity rates in 2017 were in consumer-facing industries, led by Retail trade (5.3 percent), Health Care and Social assistance (4.7), and Real State Rental and Leasing (4.6). Overall, the lowest rates were among the Utilities (2.8 percent) and Finance and Insurance (2.6) sectors.

Other findings:

- The Construction Industry experienced the greatest methamphetamine positivity rate in each year of the study, and had a 15 percent increase overall.
- Cocaine positivity rose in most sector in 2017. Those that saw the biggest jumps over the course of the study were Retail trade (42.9 percent); Administrative support, Waste Management and Remediation Services (35.3); and Transportation and Warehousing (22.7)
- Amphetamine positivity in the information sector rose more than 20 percent during the study period. However, the sector was the only one to show a drop in marijuana positivity (more than 8 percent) over the same time frame.
- Health care and Social Assistance (nearly 16 percent) and Educational Services (nearly 14 percent) also saw double-digit rises in amphetamine positivity from 2015 to 2017
- Marijuana was the most commonly detected substance, with the highest positivity rate (3.5 percent) found in accommodation and food services. That rate is nearly 35 percent than national average (2.6)

PREVENTION

Getting Help

Work can be an important place to address substance use issues. Employers and employees can collaborate to design policies which outline what is an acceptable code of behavior and what is not. By establishing or promoting programs such as an Employee Assistance Program (EAP), employers can help employees more directly or provide referrals to community services.

The policy can cover substance use issues, or it can use an overall approach such as impairment in the workplace. The main goal is that workplaces are encouraged to establish a procedure or policy so that help can be provided in a professional and consistent manner. It is important for supervisors and managers to have a resource or procedure that they can rely on if the need arises. Employees need to know that everyone will be treated the same way. These actions help to reduce the stigma associated with substance use. When stigma is reduced, it is hoped that people will seek help without fear, and will speak openly about substance use issues. Early treatment and support is encouraged.

Managers and supervisors should be educated in how to recognize and deal with substance use issues and employees should be offered educational programs. Note it is not the role of the supervisor or employer to diagnose a possible substance use or dependency problem. Their role is to identify if an employee is impaired, and to take the appropriate steps as per the organization's policy.

Substance Use Policy

Recent concerns about the regulation and legalization of non-medical cannabis in have prompted employers and other stakeholders to consider how to address substance use through effective and appropriate workplace policies and practices. CCSA's research has identified the following considerations for employers:

- Addressing substance use issues through comprehensive, well-developed policies sends the message that substance use and its potential ramifications (e.g., injuries, lost productivity, absenteeism) are important concerns within an

organization, while not having such a policy can imply that substance use is not a concern or is even tolerated, which can increase workplace risks.

Driver Safety

INCIDENT

February 27, 2020 at 6:25 AM EST

IREDELL COUNTY, N.C. (WBTV) – A driver has been charged after three workers were killed following a crash at a work zone along an interstate in Iredell County Thursday morning, according to troopers.

“I just hate that that happened. I’m extra sorry that it happened, and I can see how it can happen because it’s always something going on the interstate,” said Paris Wilson. Wilson drove through the area after the accident occurred.

The wreck happened around 3:45 a.m. on Interstate 40 westbound near mile marker 157, closing the area. Troopers say a Freightliner box truck “failed to reduce speed and struck a stationary construction vehicle that was equipped with a crash cushion and arrow board.”

Investigators say the construction vehicle’s arrow board and flashing lights were activated at the time of the crash.

Troopers say the construction vehicle was then propelled forward, striking three members of the repair crew. All three workers, identified as 20-year-old Dustin Gelinas, 21-year-old Austin Melton and 22-year-old Noah Logan Hamilton, died at the scene.

The driver of the box truck, identified by troopers as 27-year-old Logan Lee Casey, was charged with three counts of misdemeanor death by vehicle.

The box truck was owned by Triangle Central Warehouse, listed as a shipping company in Durham.

Officials say all three victims were working for a contracted guardrail repair crew identified as DBI Services.

NEED TO KNOW

There are literally hundreds of potential hazards and potentially hazardous situations you face while driving. Some of them you have little to no control over, but others you can prepare for, respond to, or avoid altogether.

Road Hazards

Road hazards include work zones; potholes and other surface hazards; poor lighting and poor visibility from blind curves, hills, or vegetation; and narrow, winding roads.

Environmental hazards

Rain, sleet, snow, and ice. Wind, dust, hail. Flooded roads, severe weather, and tornadoes. These are just a few examples of environmental hazards. Environmental hazards can be both predictable and unpredictable. But often you're aware of the danger before you drive and can make the decision to stay off the road; or turn around instead of driving through a flooded area.

hazardous behaviors

Here's the wild card of the bunch. It can be next to impossible to predict how your fellow drivers are going to act and react while driving or sitting in traffic. Are they distracted by their phone, kid, or a personal issue? Did they get enough sleep the night before? Are they under the influence of drugs or alcohol? Maybe they are in a hurry and driving aggressively, or angry about how slow traffic is moving or that driver who cut them off.

It's likely we've all been "that" driver at some point.

vehicle Hazards

Worn out brakes and threadbare tires. Burnt out lights and a blinker that doesn't work. A broken mirror or horn that doesn't work. Not keeping up with vehicle maintenance puts you, your passengers, and other drivers in danger.

BUSINESS/ REGULATIONS

Employers have duties under health and safety law for on-the-road work activities. **The Health and Safety at Work etc. Act 1974 (HSW Act)**² states you must ensure, so far as reasonably practicable, the health and safety of all employees while at work. You must also ensure that others are not put at risk by your work-related driving activities. The self-employed have similar responsibilities. 'So far as reasonably practicable' means balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk.

Health and Safety Executive Driving at Work:

You must carry out an assessment of the risks to the health and safety of your employees, while they are at work, and to other people who may be affected by your organization's work activities.

You must consult with your employees and, where applicable, their health and safety representatives, on health and safety issues, including:

- risks arising from their work;
- proposals to manage and/or control these risks;
- the best ways of providing information and training.

A brief guide to the law.

You also have duties under road traffic law, eg the **Road Traffic Act and the Road Vehicles (Construction and Use) Regulations**, which are Administered by the Police, and other Agencies such as the Driver and Vehicle Standards Agency (DVSA).

In most cases, the police will continue to take the lead on investigating road traffic incidents on public roads.

HSE will usually only take enforcement action where the police identify that serious management failures have been a significant contributory factor to the incident. If one of your employees is killed, for example while driving for work, and there is evidence that serious management failures resulted in a 'gross breach of a relevant duty of care', your company or organization could be at risk of being prosecuted under the **Corporate Manslaughter and Corporate Homicide Act 2007**.

STATISTICS

When you think of work-related safety hazards, you probably think about what goes on inside the workplace. But one of the greatest threats to your employees' safety is not in the workplace, it's on the roadways. Even though miles driven, vehicles driven, and population death rates are down (according to the National Safety Council), motor vehicle accidents and deaths are up.

Did you know?

- Every 7 seconds, someone is injured in a car crash
- Over 2 million of those injuries turn out to be disabling
- Many crashes happen during the work day or the daily commute
- Every 15 minutes, someone is killed (about 90 people each day)
- Motor vehicle crashes are the most common cause of workplace deaths in the U.S.
- 1 in 4 fatal work injuries involves a vehicle accident
- Vehicle crashes have far-reaching physical, financial, and psychological effects on employees, their families, coworkers, and you – their employer.

These statistics are cause for concern. As an employer, you can play a substantial role on reducing vehicle accidents. You can have a written driver safety program in place.

Annual Global Road Crash Statistics

- Nearly 1.25 million people die in road crashes each year, on average 3,287 deaths a day.
- An additional 20-50 million are injured or disabled.
- More than half of all road traffic deaths occur among young adults ages 15-44.
- Road traffic crashes rank as the 9th leading cause of death and account for 2.2% of all deaths globally.
- Road crashes are the leading cause of death among young people ages 15-29, and the second leading cause of death worldwide among young people ages 5-14.
- Each year nearly 400,000 people under 25 die on the world's roads, on average over 1,000 a day.
- Over 90% of all road fatalities occur in low and middle-income countries, which have less than half of the world's vehicles.
- Road crashes cost USD \$518 billion globally, costing individual countries from 1-2% of their annual GDP.
- Road crashes cost low and middle-income countries USD \$65 billion annually, exceeding the total amount received in developmental assistance.
- Unless action is taken, road traffic injuries are predicted to become the fifth leading cause of death by 2030.

Annual United States Road Crash Statistics

- Over 37,000 people die in road crashes each year
- An additional 2.35 million are injured or disabled
- Over 1,600 children under 15 years of age die each year
- Nearly 8,000 people are killed in crashes involving drivers ages 16-20
- Road crashes cost the U.S. \$230.6 billion per year, or an average of \$820 per person

RECOMMENDATION

- Assess the risks from work-related road safety in your organization.

- Produce a health and safety policy covering, for example, organizing journeys, driver training and vehicle maintenance.
 - Make sure there is top-level commitment to work-related road safety in your organization.
 - Clearly set out everyone's roles and responsibilities for work-related road safety. Those responsible should have enough authority to exert influence and be able to communicate effectively to drivers and others.
- Health and Safety Executive Driving at work: Managing work-related road safety Page 3 of 10
- **Do** – Prioritize and control your risks, consult your employees and provide training and information
 - In larger organizations, make sure departments with different responsibilities for work-related road safety co-operate with each other.
 - Make sure you have adequate systems to allow you to manage work-related road safety effectively. For example, do you ensure your vehicles are regularly inspected and serviced according to manufacturers' recommendations?
 - Make sure you involve your workers or their representatives in decisions. This is a good way of communicating with them about health and safety issues.
 - You must provide training and instruction where necessary.
- Check – Measure How you are Doing**
- Monitor performance to ensure your work-related road safety policy is effective and has been implemented.
 - Encourage your employees to report all work-related road incidents or near misses.
 - **Act** – Review your performance and learn from your experience
 - Make sure you collect enough information to allow you to make informed decisions about the effectiveness of your existing policy and the need for changes, for example targeting those more exposed to risk.
 - Regularly revisit your health and safety policy to see if it needs updating.

Assessing risks on the road – More Recommendations

As an employer or self-employed person, you are responsible for assessing the risks to health and safety in your business. **Risk assessment** for any work-related driving activity should follow the same principles as for any other work activity.

You can delegate the task, but you will need to make sure it is carried out by someone who:

- is competent to do so (has the right skills, knowledge and experience);
- involves your workers in the process;
- understands when specialist help may be needed.

Risk assessment is about identifying and taking sensible measures to control the risks in your workplace, not about creating huge amounts of paperwork. You may already be taking steps to protect your employees, but your risk assessment will help you decide whether you should be doing more. The aim is to make the risk of someone being injured or killed as low as possible.

A hazard is something in your business that can cause harm. A risk is the chance, however large or small, that a hazard could cause harm. Identify the hazards Look for hazards that may result in harm when driving on public roads. Remember to ask your employees, or their representatives, what they think as they will have first-hand experience of what happens in practice.

PREVENTION

Top 20 Safety Tips for Driving

Safety is something that drivers should keep in mind at all times. After all, when you are operating a motorized vehicle, you have a responsibility to do your part to keep the roadways safe for yourself, other drivers, passengers, and others who may be affected by traffic accidents.

1. **Stay Alert**– Actively pay attention to your actions and those of the drivers around you when you are driving.
2. **Avoid Assumptions**– Don't make the mistake of assuming that other drivers are going to do or what you think they should

do.

3. **Use Turn Signals**— While you can't depend on others always signaling their intentions when driving, you can certainly control whether or not they have realistic expectations for your actions. Always use your turn signals in advance of making a lane change or turning.
4. **Buckle Up**— Wearing your seat belt is an essential safety tip for drivers. Not only are you more likely to get injured in an accident if you aren't wearing a seat belt, you can also be fined for failing to do so.
5. **Follow Traffic Signals**— Pay close attention to and obey stop signs and traffic lights.
6. **Respect Yellow Lights**— Remember that the intent of a yellow light is to notify drivers to slow down and prepare to stop. A yellow traffic signal should not be viewed as a sign to step on the gas to rush through an intersection before the light turns red.
7. **Come to a Complete Stop**— When you see a stop sign or a red light, it's important to bring your vehicle to a complete stop, even if you think no other vehicles are coming.
8. **Do Not Text and Drive**— It is never acceptable to send text messages when operating a motor vehicle.
9. **Obey Speed Limits**— When driving, it's important to stick to the posted speed limit at all times. The restrictions placed on vehicle speed are not established arbitrarily. Rather, they are carefully selected to maximize safety for drivers and for individuals in the homes, businesses, and other organizations in the areas where roadways are located.
10. **Make Adjustments for Weather**— When the weather is less than perfect, such as rainy, snowy, or foggy conditions, use extra precautions when driving and follow guidelines for staying safe in the particular situation you are facing.
11. **Exercise Patience**— Many accidents are caused by impatient drivers who are rushing to get from point A to point B. While time is certainly a valid consideration when traveling, safety is even more important. After all, if you are involved in an accident you'll certainly experience more of a challenge arriving at your destination on time than if

you simply exhibit patience while driving.

12. **Be Predictable**— Don't make sudden stops or lane changes. Instead, take care to ensure that other drivers are likely to be able to predict your actions to maximize safety.
13. **Never Drive Under the Influence**— It's essential to avoid operating a vehicle if you have been drinking, taking certain types of prescription or non-prescription drugs, or are otherwise impaired.
14. **Yield Right of Way**— When other drivers has the right of way, be sure to yield to them. Also, don't make the mistake of assuming that everyone else will yield to you when they should. Regardless of who has the right to go, yield if it seems that the other driver may not be observing standard practices for yielding.
15. **Know Where You Are Going**— Plan your travel route ahead of time so that you aren't struggling to figure out where to go while you are operating a motorized vehicle.
16. **Respect Stopped Vehicles**— When passing vehicles that are stopped on the side of the road, move over to get out of the way if the way is clear for you to change lanes. If changing lanes is not possible, slow down while passing stopped vehicles.
17. **Avoid Distractions**— Sending text messages isn't the only dangerous distraction that drivers need to avoid while operating a vehicle. Changing CDs, using cell phones, eating, and interacting with passengers are just a few examples of the types of distractions that you should take care to avoid when driving.
18. **Use Headlights When Needed**— Headlights aren't just necessary at night. When you are driving in the rain or fog, turning on your headlights can play an important role in keeping you – and those around you – safe on the road.
19. **Share the Road**— Remember that you are not the only driver on the road. An important safety trip that everyone needs to follow is the need to share the road with others graciously, recognizing that all drivers deserve to be treated with respect.
20. **Proper Vehicle Maintenance**— Take care to ensure that your

automobile stays in good working condition. This includes keeping fluids topped off, performing schedule engine maintenance, making certain tires have plenty of air, and ensuring that the vehicle's exterior lights are functional at all times.

Five Tips for Employee Driving Safety

1. Stay Focused

Anytime you're behind the wheel, it's important to keep your attention focused on the road. If you're driving [heavy equipment](#), this is even more important. A lapse in attention, whether to adjust the radio or eat a snack, can cause an accident and injure you and other people on the road.

2. Stay Alert

According to a study by the [National Sleep Foundation](#), 60% of American drivers report that they've driven when they are drowsy, and 37% say they have actually fallen asleep while driving. Drowsy driving is a major hazard, especially for long-distance [truckers](#), delivery people, and others who drive regularly for their work. If you're tired, pull over to take a nap. If you regularly experience this problem, consider speaking to your employer about taking a different shift.

3. Stay Off Your Cell Phone

It's tempting to multi-task when you're behind the wheel, but cell phones can cause accidents. In fact, according to the [CDC](#), cell phones are a factor in about 1,000 deaths and 24,000 injuries each year. Mobile phone usage while driving has been outlawed in many states, and a 2010 law says that commercial drivers can't text when they're behind the wheel.

4. Ask Your Employer for a GPS Device

GPS devices allow the driver to keep his or her eyes on the road

instead of a map. The GPS is programmed with the destination prior to the trip and gives the driver verbal directions on how to get where he wants to go. This can be especially helpful for delivery drivers who must make multiple stops.

5. Identify Impaired Drivers

Impaired drivers are a huge road hazard. Learn how to identify a driver that may be under the influence of alcohol or simply drowsy. These drivers often weave and swerve, and they may change speeds frequently. If you see a driver acting this way, you should stay a safe distance away. If it's safe to do so, pull over and call the police from inside your car. You might not want to get involved, but alerting the police to a potentially impaired driver may just save a life.

Five Driving Safety Improvement Tips for Employers

1. Educate Your Employees

Employers can reduce work-related auto accidents by educating their employees about driving safety. Consider hiring a driver educator to give your workers a refresher course.

2. Make Sure Work Vehicles Are Properly Maintained

Employers should perform a monthly comprehensive workplace vehicle inspection on each company vehicle. This helps ensure the vehicle won't have any potentially dangerous malfunctions while it's on the road.

3. Consider Staffing Changes

Make sure that your workplace is adequately staffed. Overworked drivers are often unsafe drivers, and some workers may have trouble staying awake during late night shifts. Smart staffing

helps you prevent accidents.

4. Implement an Incentive Program

Although no one wants to get in a car accident, you can help employees stay aware of automobile safety if you offer an incentive program. Give out a monthly gift card to the employee with the best driving record or least number of work-related accidents.

5. Discipline Unsafe Drivers

In addition to offering an incentive, you should also consider a discipline system for drivers who have accidents. There should be a thorough report about all incidents, and drivers who are at fault should be disciplined.

Fatality File: JSA / Audits/ Inspections

INCIDENT

The relatives of the Danbury man [killed in an industrial accident](#) at New Milford factory filed a wrongful death suit against the company.

Daniel Kendrick died June 7, after becoming entangled in a conveyor belt system at New Milford Block & Supply on Danbury Road.

The 29-year-old Florida native had worked at the concrete block and brick manufacturing company as a production operator for less than a year.

His sisters and the administrators of his estate, Leah Kendrick

and Leslie Stieber, [filed a lawsuit](#) against New Milford Block & Supply and The Montfort Group in state Superior Court in Danbury – alleging that “carelessness and negligence” resulted in their brother’s death.

Kendrick died from blunt and compressive injuries to his head and torso after falling onto a conveyor belt at New Milford Block & Supply – a business owned by The Monfort Group, which also has locations in Fishkill and New Windsor, N.Y.

The lawsuit claims that New Milford Block & Supply and The Montfort Group had a duty to “exercise care to maintain the premises in a reasonably safe condition” and failed to do so.

Kendrick’s sisters are accusing the company of creating dangerous workplace conditions by failing to have adequate and/or appropriate safeguards, such as emergency stop devices, side rails and stair protection.

Upon notification of the workplace fatality, the Occupational Safety and Health Administration launched an investigation into possible workplace safety standard violations at New Milford Block & Supply.

The OSHA cited 21 serious, one repeat and three “other” violations in its [inspection of the company](#) – ranging from ladders, powered industrial trucks, stairways and training to fall protection systems, permit-required confined spaces, hazardous energy controls and machine requirements – and imposed nearly \$150,000 in fines.

“The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees,” states one of the violations noted in the inspection.

New Milford Block & Supply was previously cited for several OSHA violations in 2018 and 2013, according to the U.S. Department of Labor.

Kendrick’s [loved ones remembered him](#) as a funny, caring and

charismatic person.

“He would have done anything for anyone,” said Shelby Pritchard, who met Kendrick five years ago through her son’s father and Kendrick’s cousin, Dwight Johnson.

“Daniel made friends with everyone,” she said. “He was a loving uncle, cousin, nephew, son, brother and friend. He was taken from us way to young.”

Kendrick’s sisters are seeking at least \$15,000 in monetary damages and “such other and further relief as the court deems fair and equitable,” according to the lawsuit.

NEED TO KNOW

A simple risk analysis can help you determine where – and what – personal protective equipment should be used.

A job safety analysis (**JSA**) is a procedure which helps integrate accepted safety and health principles and practices into a particular task or job operation. In a **JSA**, each basic step of the job is to identify potential hazards and to recommend the safest way to do the job. Other terms used to describe this procedure are job hazard analysis (**JHA**) and job hazard breakdown.

Inspection of work areas and audits of safety programs are tools that can be used to identify problems and hazards before these conditions result in accidents or injuries. Audits also help to identify the effectiveness of safety program management and can be used as a guide to assure regulatory compliance and a safe workplace.

A job safety analysis (**JSA**), also called a job hazard analysis or job task analysis, is a systematic analysis of a specific job in a specific location to identify the hazards and determine the controls. By completing a **JSA**, you ensure that you have properly planned the work and that workers can do it safely. As a written document, it can serve as evidence of due diligence.

Factors to be considered in setting a priority for analysis of

jobs include:

- Accident frequency and severity: jobs where accidents occur frequently or where they occur infrequently but result in serious injuries.
- Potential for severe injuries or illnesses: the consequences of an accident, hazardous condition, or exposure to harmful products are potentially severe.
- Newly established jobs: due to lack of experience in these jobs, hazards may not be evident or anticipated.
- Modified jobs: new hazards may be associated with changes in job procedures.
- Infrequently performed jobs: workers may be at greater risk when undertaking non-routine jobs, and a **JSA** provides a means of reviewing hazards.
- Inspections are a key part of good health and safety management. They allow you to check that your workplace and work activities are healthy and safe. Workplace inspections help prevent incidents, injuries and illnesses.

BUSINESS / REGULATION

Responsibilities of Management

- Design and schedule audit and inspection procedures for all work areas, processes and procedures.
- Conduct routine audits and inspections
- Ensure audits are conducted by employees who understand the various safety programs and policies

Responsibilities of Supervisors

- Conduct informal daily safety inspections and ensure all unsafe conditions are corrected
- Conduct documented weekly inspections and ensure all unsafe conditions are corrected

Corrections

All safety deficiencies found during audits and inspections should

be corrected as soon as possible. Documentation of corrections should be made on the audit or inspection sheet. And conditions that present hazards are to be corrected or controlled immediately.

Hazard assessments are required under OSHA regulations for deciding what personal protective equipment controls may be needed for hazards on the job. A literal reading would even suggest that they be completed for work tasks that may not require the use of personal protective equipment. This would be necessary simply to make the determination that personal protective equipment is not needed.

STATISTICS

There were over 10 million workers in the U.S. construction industry as of 2016.

The Engineering & Construction (E&C) industry is one of the world's largest sectors of the economy with \$10 trillion spent on construction-related goods and services each year.

Construction Supervisors: [#9 most dangerous job of 2018](#).

- 18 fatal injuries per 100,000 workers
- 134 fatalities

According to [fatal work injury rates](#) reported by the Bureau of Labors Statistics.

43% of construction workers plan to work past age 65, according to a health and retirement study by the Center for Construction Research & Training.

60% of OSHA inspections were in the construction industry as of 2016.

Projected growth of the industry and the number of construction worker deaths are on the rise.

991 deaths out of 4,693 (21%) were in construction.

The Fatal Four

OSHA identifies the [leading causes of fatalities](#) in the construction industry as the “Fatal Four.” In 2017, the Fatal Four claimed seven spots on OSHA’s Top 10 list of most-cited violations.

OSHA estimates that eliminating these four hazards in construction would save 631 workers’ lives per year in America.

PREVENTION

The final stage in a JSA is to determine ways to eliminate or control the hazards identified. The generally accepted measures, in order of preference, are:

1. Eliminate the hazard

Elimination is the most effective measure. These techniques should be used to eliminate the hazards:

- Choose a different process
- Modify an existing process
- Substitute with less hazardous product
- Improve environment (e.g., ventilation)
- Modify or change equipment or tools

OSHA Regulations

The requirements for personal protective equipment for General Industry are contained in 29 CFR Part 1910.132. In this context, personal protective equipment refers to head, eye and face, respiratory, body, hand and foot protection. Personal protective equipment for construction, shipbuilding, longshoring and other distinctly regulated sectors are covered in those sector regulations. Hearing protection, fall protection and other special types of personal protective equipment are covered under other sections of OSHA standards. The General Industry section of the OSHA regulation states, in part:

“The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE).”

“The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the dates(s) of the hazard assessment; and which identifies the document as a certification of hazard assessment.”

The hazard assessment requirement (contained under paragraph d) and a paragraph on training requirements (paragraph f) apply to sections 1910.133 (Eye & Face Protection), 1910.135 (Head Protection), 1910.136 (Foot Protection), and 1910.138 (Hand Protection) While not explicitly stated, it would also apply to protection of the body (e.g., protective clothing). The hazard assessment and training requirements in this part of the OSHA standards do not apply to sections 1910.134 (Respiratory Protection) and 1910.137 (Electrical Protective Equipment), because each of these has its own selection scheme.

OSHA requires a written certification that the hazard assessment has been performed. However, there is no requirement that the hazard assessment itself be in writing. Most professionals would suggest that written documentation of the actual assessment, although not literally required, would be a best practice.

2. Contain the hazard

If the hazard cannot be eliminated, contact might be prevented by using enclosures, machine guards, worker booths or similar devices.

3. Revise work procedures

Consideration might be given to modifying steps which are hazardous, changing the sequence of steps, or adding additional steps (such as locking out energy sources).

4. Reduce the exposure

These measures are the least effective and should only be used if no other solutions are possible. One way of minimizing exposure is to reduce the number of times the hazard is encountered. An example would be modifying machinery so that less maintenance is necessary. The use of appropriate personal protective equipment may be required. To reduce the severity of an incident, emergency facilities, such as eyewash stations, may need to be provided.

Cinematographer Dies on Set

INCIDENT

Sarah Jones had the following credits:

- member of the International Cinematographers Build (IATSE Local 600)
- assistant camerawoman on The Vampire Diaries.
- cinematographer on The Public of Pete

She will never receive another production credit.

Just 27 years old, Jones was killed by an oncoming train on a movie set outside of Doctoryown, Georgia. She was working on the camera crew for Midnight Rider, a biographical film about rock singer Gregg Allman, starring William Hurt. Randall Miller is the director of the film; his production company, Unclaimed Freight, was managing the project.

Jones was killed and other crew members were injured while shooting a dream sequence on a train trestle crossing the Altamaha River in rural Wayne County. A metal frame bed and other scenery were in place when a CSX freight train came hurtling down the track at 60 miles an hour. The cast and crew had just 60 seconds

to move scenery, cameras, equipment – and themselves – out of danger.

It was not enough time.

The Hollywood Reporter published a detailed account of the February 20, 2014 tragedy. It includes this description of the fatal event, as related by hairstylist Joyce Gilliard, who barely survived:

Jones had tried to find shelter on the gangplank. But when the train hit the bed and mattress, it sent debris flying. Something may have hit Jones, possibly propelling her into the train's path. In the melee, Miller also fell on the tracks. A still photographer nearby managed to pull him away just in time. He was sobbing, Gilliard says, trying to cope with the disaster. Hurt also survived unscathed. The traumatized crew helped collect Jones' body.

NEED TO KNOW

Legendary rock n' roll icon Gregg Allman was to be portrayed in a biographical film in "MIDNIGHT RIDER". A train arrived but with tragic consequences.

BUSINESS / REGULATIONS

The Georgia Bureau of Investigation, says The Hollywood Reporter, is "treating the investigation into Jones' death as a negligent homicide." Federal OSHA and the National Transportation Board also have investigations underway.

A CSX employee told Sgt. Ben Robertson of the Wayne County Sheriff's office that the production company had asked for permission to shoot on the train tracks – and had been denied. But a member of the crew, says The Hollywood Reporter, "when asked whether permission was granted, replied, 'It's complicated.'"

"It's not complicated," retorted Lee Danielson, who was a friend of Sarah Jones and an official of IATSE in Georgia. "You either have permission or you don't." In the aftermath of the incident

crew members also noted that no railroad personnel were present on the set, although a film shoot on a train track would typically involve a number of safety personnel from the railroad. According to Joyce Gilliard, there was no safety meeting of any kind on the set on February 20th.

Jones death did not go unnoticed. She worked with many industry veterans during her short career, and is remembered with great affection by friends and colleagues. Given the prominence of the film industry, her death is probably one of the most widely-reported industrial fatalities in recent years. She was recognized during the Oscar telecast, and hundreds marched to remember her in Atlanta and in Los Angeles.

Sarah's father encouraged mourners to advocate for safety on film sets following a candlelit walk in Los Angeles on March 7/2014 where more than 500 gathered to walk.

Richard Jones said "Thank you for this beautiful tribute," he said. "Do not have a reason for another father to stand up here. No one's daughter and no one's son should ever die again making a film. Never."

"No workers should ever be afraid of speaking up or refusing to participate when they feel they are in an unsafe situation," said IATSE Vice President Mike Miller, who also spoke at the event.

STATISTICS

Though statistics are sparse as the New York Times reports there are issues of safety in film projects. According to the Bureau of Labor statistics (B.L.S) seven workers died in the motion picture and sound recording industries in 2012.

PREVENTION

Are proper precautions being implemented and enforced in the film industry? Particularly, in low-budget and independent productions.

The New York Times report opined further on safety issues in this industry.

A frequent safety complaint among film crews working on both studio and independent productions centers on a common practice of demanding long work days of fourteen or more hours. The filmmaker Haskell Wexler described the hazards of long days in his 2006 documentary *Who Needs Sleep?* Among other things, he recounted how lack of sleep led to the driving death of an assistant camera operator in 1997.

Automotive Worker Dies in Hot Plant

INCIDENT

Teresa Pickard, 42, went to work on the welding line at Sewon America, an auto parts plant in LaGrange, Georgia at 6:30 am on Wednesday, May 29th, 2013.

Sewon America, located about 70 miles southwest of Atlanta, and a dozen other plants supply a Kia automobile assembly plant in West Point, Georgia, which opened in 2009. Together, the suppliers account for more than 14,000 manufacturing jobs.

She never came home. Pickard complained of chest pains. An ambulance was summoned to the plant about two hours after her shift started, and she died either on the way to the hospital or shortly after arriving there.

NEED TO KNOW

The Atlanta Journal constitution newspaper opined that the “list of workers injured at Sewon is as gruesome as it is long.” Teresa Pickard was one of these workers.

BUSINESS / REGULATIONS

Ten days after Pickard’s death, Sewon America released a statement

claiming that “ a thorough investigation and preliminary findings from the appropriate sources indicate that her death was not work related.” An autopsy by the Georgia Bureau of Investigation, released five months later, states that Pickard died of natural causes – a heart attack caused by high blood pressure.

Immediately following the incident, however, workers from the plant complained anonymously to U.S. OSHA about excessive heat inside the facility. The agency opened an investigation.

On June 29, one month after Pickard died, about 50 workers and supporters held a demonstration outside the plant to protest reports of extreme heat, lack of access to water, and other unsafe conditions.

Following news of Pickard’s death and reports of complaints from employees inside the plant, the Atlanta Journal-Constitution undertook a detailed investigation of Sewon America’s safety record.

Among the newspaper’s findings:

The list of workers injured at Sewon is as gruesome as it is long. Arms and legs lacerated by steel parts. Fingers crushed by machines and pallets. Eyeballs sunburned by welding rays. A scrotum punctured by a “sharp object.”

Few manufacturing plants in Georgia, and none in the state’s burgeoning auto industry, have been inspected, cited and fined as often as Sewon by the Federal Occupational Safety and Health Administration (OSHA).

From the time the plant opened through the end of last year, ambulance drivers responded to 23 “trauma” calls –cuts, falls, head injuries, fist fights, arms crushed or stuck in machines –at Sewon.

Sewon has been inspected nine times [by US OSHA] and cited for 18 violations. Two of the violations, for welding flash burns and insufficient protective gear, were “willful,” or committed by Sewon “with plain indifference to, or intentional disregard for,

employees' safety and health," according to OSHA. The feds also cited the company for numerous "serious violations" in which a substantial probability exists for death or serious injury.

OSHA also opined about the list of newspaper findings by saying:

"For a single facility at the same location performing the same type of work, that is unusual compared to other establishments," acting OSHA deputy regional administrator Ben Ross told the Journal-Constitution. "It doesn't take a rocket scientist to see that employees are still unhappy with working conditions and still filing complaints."

But the biggest impact of Teresa Pickard is on her family. She left behind a husband two daughters Shundrick and Shaquitt. Their collective loss eclipses all the fines, costs legal fees, that Sewon had to pay. Money paid by Sewon would never replace the life of Teresa.

STATISTICS

The National Council for Occupational Safety and Health (National COSH) is the largest open-access data set of individual workplace fatalities ever collected in the United States. Two-thirds of the cases include names of the deceased workers.

With data from 2015, the Worker Fatality Database has more identifying information about workers and the circumstances of their deaths and is more current than the Census of Fatal Occupational Injuries (CFOI), released annually by the U.S. Bureau of Labor Statistics (BLS). The most recent CFOI, released in April 2015, reports workplace deaths from calendar year 2013. It includes comprehensive aggregate and statistical data but does not have information on individual workers.

BLS data have shown more than 4,500 workplace deaths from traumatic events in each of the past five years. In addition, an estimated 50,000 workers die each year from long term occupational hazards, such as exposure to toxic chemicals and other hazards.

Teresa's situation is one of those workplace deaths from traumatic

events. Her death is likely a result of excessive heat in the workplace. She perished like other men and women who perish every day harvesting our food, building our homes, extracting our fuel and doing all the other jobs that move our economy.

The U.S. Workers Fatality Database shows death so fair in 2015 from 49 states as well as the District of Columbia, Puerto Rico and the U.S. Virgin Islands. Workers have died in 2015 when crushed by machinery, poisoned by carbon monoxide, falling from heights, buried by trench collapses, and from other causes.

PREVENTION

In the present case, there is more than a strong probability that the reason Teresa Pickard died was exposure to excessive heat inside the facility. In the face of extreme heat, lack of access to water there are steps to take to ensure a safe work environment. These are:

- conduct periodic safety inspections.
- provide workers training on hazard awareness like excessive heat.
- ensure that there is access to drinkable water within easy reach of workers.
- provide periodic breaks when there is excessive heat in the workplace.

The key to workplace safety is knowledge and training. Employees must develop and provide training and information programs to all workers who were exposed t the hazards that existed at the Sewon America Plant.

Young Oil Field Worker Killed

by Hydrogen Sulfide

INCIDENT

Mr. Provancher on October 9th, 2012 with a co-worker Eric Williams, were replacing pipes at an oil pumping location in Dunn County, North Dakota. One of the pipes burst, releasing a cloud of hydrogen sulfide, a highly toxic colorless gas which carries a distinctive “rotten egg” odor.

High concentrations of the gas, according to an OSHA fact sheet, “can cause shock, convulsions, inability to breathe, extremely rapid unconsciousness, coma and death. Effects can occur within a few breaths, and possibly a single breath.”

Williams, who himself was hit with a heavy dose of the gas, ran from the building, but returned when he saw that Provancher was still inside and dragged him out of the building. Williams attempted CPR on his co-worker until an ambulance arrived.

Provancher was taken by ambulance to St. Joseph’s Hospital in Dickinson, North Dakota. He died two days later, on October 11th.

NEED TO KNOW

At the age of 25, Ryan Provancher was a 7-yr. veteran in the booming oil fields in North Dakota. But a broken pipe, a cloud of hydrogen sulfide, caused the death of Mr. Provancher from toxic exposure.

BUSINESS / REGULATIONS

The incident is under investigation by OSHA, although the agency was unable to send an investigator to the scene until nearly a week after it took place. A government shutdown was in effect at the time, and a federal worker had to be called back from furlough to carry out an inspection.

This veteran worker at the age of 25 could not make a further mark in life for an accident that could have been prevented. But in the

end, he could not outlive his grandparents, parents, two brothers, two sisters and a girlfriend. He was cremated October 15 / 12.

STATISTICS

Oil and gas extraction have become the most dangerous industry in America, according to 2012 data from the U.S Bureau of Labor Statistics. Deaths in the industry jumped by 23 percent in 2012, to 138 deaths from 112 in 2011. The 2012 figure is the highest number of deaths recorded in oil and gas extraction since BLS began the current Census of Fatal Occupational Injuries in 2003. The figure is based on preliminary data and is likely to become higher when final figures are released.

The oil and gas extraction industry now have a fatality rate of 24.2 deaths for every 100,000 full-time workers –higher than any other industry. The overall rate of fatalities in the United States is 3.2 deaths per 100,000 workers.

PREVENTION

It is not difficult to come up with ways to prevent injury and death even in the macho and rough and tumble mantra of oil field work.

OSHS's Hazard alert on hydrogen sulfide encapsulates three best practices, such as:

- active monitoring for hydrogen sulfide gas.
- good planning
- training programs

Crane Safety Fatality Report

INCIDENT

A crane collapse in Seattle killed four people includes five

companies. Bisnow/Shawna De La Rosa Cranes hover over the skyline in Seattle's South Lake Union, the most crane-dense section of the city. IN 76 DAYS! DON'T MISS THE SOUTH FLORIDA CONSTRUCTION & DEVELOPMENT – South Florida Seaburg Construction, which employed the operator of the tower crane before workers began to dismantle it, now joins GLY Construction, Northwest Tower Crane Service, Omega Morgan and crane owner Morrow Equipment as the parties being investigated by the Washington State Department of Labor and Industries, according to a report by the Seattle Times.

The four people that died in the accident include experienced ironworkers Travis Corbet, a U.S. Marine and resident of Portland, and Marine Corp. Reservist Andrew Yoder of North Bend. Nineteen-year-old Sarah Wong from South Pasadena, California, and 71-year-old city of Seattle employee Alan Justad were killed in separate cars on Mercer Street, according to the Seattle Times.

Though the official investigation is months away from completion, speculation around what caused the crane accident now includes a combination of weather and human error, according to CNN. After reviewing video, trial attorney David L. Kwass, who has handled crane accident lawsuits, said it appeared that the pins connecting the crane's segments may have been removed too soon.

Forecast gusty winds were blowing through the area at the time of the collapse. A meteorology report from Cliff Mass, local weather guru and professor of atmospheric sciences at the University of Washington, show wind gusts reached 35 mph at 3:26 p.m. at a weather station near the site just minutes before the collapse.

Six cars were hit and three other people, including a 4-month-old infant, were injured and taken to the hospital. Another person was injured but did not go to the hospital.

The incident took place in the South Lake Union neighborhood, one of Seattle's fastest-growing areas. It is home to several tech companies, including Amazon.

The crane was in the process of being dismantled at the time of the accident.

The campus is being developed by late Microsoft co-founder Paul Allen's Vulcan Real Estate. Vulcan is responsible for much of the development in the area. The general contractor is Bellevue-based GLY, which is also the general contractor on Amazon Block 21, Seattle Cancer Care Alliance, Overlake Medical Center and Two Union Square, as well as several other projects.

The Google campus, set to be complete this quarter, sits on Mercer between the streets of Fairview and Boren, overlooking South Lake Union. According to reports, the crane fell off the building that was closer to Fairview.

The accident closed down Mercer Street, one of the busiest streets in the city, in both directions while the investigation is underway. Street repairs will need to be complete before the street reopens to traffic. Severe traffic congestion is expected.

Google will occupy the office space in the four-building, 607K SF project, which also includes 150 apartments, according to the Seattle Times. Google agreed to lease the space for 14 to 16 years, GeekWire reports.

For three years in a row, Seattle has had the most cranes in the country, a sign of the construction boom in the city, according to KOMO News. As of January, the number sat at 59. The region had another deadly crane accident in 2006 when a crane fell off a building in Bellevue, killing a man who was sitting in his apartment.

NEED TO KNOW

Cranes do most of the heavy lifting in industrial and construction workspaces – literally. They're some of the most essential equipment found in any production facility, job site or logistics hub.

Cranes are a constant presence in most industrial or construction contexts. This means the right safety measures should be just as ubiquitous. Without a focus on safe operation, any type of heavy equipment can become more of a liability than a benefit.

The massive cranes that transcend our skylines are imposing devices. Questions range... are the operators competent and qualified to operate?... how are operators trained?... who evaluates them? ... is there re-training and refresher courses?... How is the safety of operators and workers in proximity ensured and monitored?

Today, manufacturing and construction industries move large, heavy loads. Careful training and extensive workplace precautions and improving technologies have been developed for those operations. There are significant safety issues to be considered for both operators of cranes including workers in close proximity.

Construction sites are among the most dangerous sites in all industry. Records are replete with injuries and fatalities. Osha itself says that approximately 75% of struck – by fatalities involve heavy equipment such as cranes and trucks.

Scrupulous adherence to safety must be demanded at all times in crane operations. If safety protocol is not strictly followed, death in the workplace will occur. You cannot take anything for granted or in other words be sloppy or flippant in administering the appropriate safety protocols relating to crane operations.

Successful crane operations are dependent on a true partnership of owners of the project, workers and regulatory bodies. Each of the above have common interests.

- Complete the project or work on schedule.
- Do not incur additional costs.
- Serious injury or death is avoided.

Safety must be considered at every step in the value chain and designing safety. One of the key steps is choosing contractors with proven safety records to be partners. Choosing the right partners is the first step in the value chain.

The contractors have extensive safety manuals that include for example 100% Fall Protection where all employees working above 6 feet required tie off, and if there is no place to tie off safety then the rules state that no one is allowed to work until

lifelines have been extended.

To be able to improve safety, it is important to measure leading indicators in addition to traditional lagging indicators.

Construction sites should be documenting leading indicators such as near-misses to learn what went wrong and safety perception surveys to determine how safer workers feel on a project.

BUSINESS / REGULATIONS

OSHA Proposes New Rule for Crane Operators in Construction

On May 18 2018, OSHA published its proposed rule for crane operators in construction to amend requirements in the previous rule from 2010. The proposed rule sought to remove the requirement for operators to be certified in the *capacity* of the crane being used. This would allow for more operators to be able to meet the requirement.

OSHA's Previous Rule on Crane Operators

In 2010 OSHA issued the final rule for cranes and derricks. This rule required crane operators to be certified by type of crane and the capacity of the crane. While this may sound like a logical requirement, the trouble is no certification existed for capacity of cranes, only for type. OSHA extended the deadline of compliance from 2014 to 2017 so that certification organizations could alter their programs to align with OSHA's new requirement. As of November 2017, no certification program included capacity, so OSHA extended the compliance date again until November of 2018 and put out a new proposed rule which would remove the requirement for capacity from the standard. According to the NCCCO (National Commission for the Certification of Crane Operators) OSHA does not believe it will be able to get the proposed rule passed in time for the November 2018 enforcement date, and requested until April 2019 as a proposed enforcement date.

Changes in the New Proposed Rule

To sum it up, there were three big changes included in the new proposed rule:

- Removal of the requirement to certify operators by capacity of the crane.
- Permanently maintain the employer's duty to evaluate its operators.
- Additional requirement for employers to pay for employees' certification with no cost to the employee.

Update: Rule Finalized, November 10, 2018 Enforcement Date

On November 5, 2018 OSHA released a memo stating the agency "does not intend to enforce the requirement that certification identify a lifting capacity for the certification." This means the proposed changes withheld and the requirements have been reducing from needing certification by *type and capacity* to just *type*.

There are now two important dates to be aware of:

- November 10, 2018: Enforcement begins, operators must have a certification by type of crane.
- February 7, 2019: Employers are required to evaluate operators to ensure they are licensed, certified, trained and evaluated. **(Optimum Safety Management)**

STATISTICS

A total of 323 construction worker deaths involving 307 crane incidents were identified from 1992-2006, an average of 22 construction worker deaths per year. There were 12 multiple-death incidents in this time period, resulting in a total of 28 deaths.

From 2011 to 2015, the Census of Fatal Occupational Injuries (CF0I) reported 220 total crane-related deaths, an average of 44 per year over this 5-year period. Men accounted for 217 of the 220 fatal injuries involving cranes. White, non-Hispanic workers accounted for 74 percent of fatal injuries involving cranes, while

14 percent involved Hispanic and Latino workers.

Crane related workplace fatalities and occupational injuries reached their lowest points since the CF0I started in 2003, amounting to 33 deaths in **2017**.

PREVENTION

There have been strides to improve crane operational safety in past decade. The improvement has been incremental but noticeable.

Yet even though they're a constant presence in the workplace and we may take them for granted, that doesn't mean we can ignore the dangers they pose. When operated with a focus on safety, cranes are vital pieces of equipment. When they're used carelessly, they can be a serious hazard to people and property. The majority of accidents in the workplace could have been prevented. With that in mind, here are the **top five crane safety tips** to help you avoid disastrous incidents in your workplace.

- 1. Ensure crane equipment is only operated by qualified workers with the proper certifications and hours training on the equipment.**

Complex, heavy machinery requires specialized knowledge to operate safely. That's why an important element of crane lifting safety is confirming that employees who use it have the right expertise. Operators not only must know the equipment inside and out, but they also need to be well-versed in all of the proper safety procedures. These include knowing the appropriate hand signals.

- 2. Inspect both the equipment and the load before operation of lifting equipment.**

Operators must take a close look at their equipment before lifting. For example, visually checking cables and booms for any cracks or other signs of wear. If equipment appears to be damaged or worn, it must be taken out of service and repaired. Additionally, the loads should be inspected to guarantee they are properly secured. Confirming that the load does not exceed the

limits of the equipment also is crucial for crane operation safety.

- 3. Ensure ground workers are clear of the crane operation area and are nowhere beneath the load while the equipment is being operated.**

A safe worksite is everyone's responsibility. Workers on the ground should be reminded frequently to keep a safe perimeter around cranes at all times. This is one precaution that needs to be reinforced at daily safety briefings. Planning lifting operations well in advance also means the area will be clear of people at the designated time.

- 4. Ensure adequate time has been allocated for use of the crane to avoid rushing the task/project.**

A common cause of accidents is carelessness. This frequently stems from workers who are trying to cut corners and rush through their tasks. It is critical to plan operations so operators will have enough time to thoroughly inspect equipment and follow proper safety procedures.

- 5. Review safety checklists or cards before operating the crane.**

Because cranes can be so complicated, it's easy for certain procedures to be forgotten. That is why it is necessary to provide all employees with cards or checklists detailing safety protocols. This is imperative not only for crane operators, but also for all other workers on the job site. Employees should be encouraged to review the safety cards before they begin every shift. These checklists should be posted in prominent locations around the job site, as well as provided to everyone there.

Injury / Illness

INCIDENT

A man died after being hospitalized with a back injury from a construction incident, although he died from an unrelated cause. Alejandro Becerra, 53, a framer, died from complications relating to pre-existing conditions.

More than a week earlier, Becerra had been helping to erect a commercial building when the construction incident occurred. An eight-foot-tall wall frame tipped over, injuring four workers. Three of the four suffered mostly cuts and scrapes, but Becerra was taken to hospital with a broken back. After a few days he was transferred to a regional medical center, where he died.

Sheriffs said he apparently died from diabetes and a heart condition.

It's a sad truth that illnesses and general ill-health kill more workers than industrial accidents. Avoiding or reversing the progress of these conditions may be as simple as changing your diet and exercise habits.

For those of us with chronic conditions, talking to medical professionals and following their advice is usually the best course of action. Many chronic conditions can be managed successfully.

NEED TO KNOW

An *injury and illness prevention program*,^{[1](#)} is a proactive process to help employers find and fix workplace hazards before workers are hurt. We know these programs can be effective at reducing injuries, illnesses, and fatalities. Many workplaces have already adopted such approaches, for example as part of OSHA's cooperative programs. Not only do these employers experience dramatic decreases in workplace injuries, but they often report a transformed workplace culture that can lead to higher productivity and quality, reduced turnover, reduced costs, and greater employee

satisfaction.

Thirty-four states and many nations around the world already require or encourage employers to implement such programs. The key elements common to all of these programs are management leadership, worker participation, hazard identification and assessment, hazard prevention and control, education and training, and program evaluation and improvement.

Based on the positive experience of employers with existing programs, OSHA believes that injury and illness prevention programs provide the foundation for breakthrough changes in the way employers identify and control hazards, leading to a significantly improved workplace health and safety environment. Adoption of an injury and illness prevention program will result in workers suffering fewer injuries, illnesses and fatalities. In addition, employers will improve their compliance with existing regulations, and will experience many of the financial benefits of a safer and healthier workplace cited in published studies and reports by individual companies, including significant reductions in workers' compensation premiums.

Fortunately, over the years, injuries and fatalities in the workplace have decreased substantially. Unfortunately, there are many workplace injuries and fatalities that continue to occur every day. OSHA reports that there is an average of 12 work-related fatalities throughout the United States every day.

BUSINESS / REGULATION

Every California employer around the State is required by Cal/OSHA to establish, implement and maintain a written Injury and Illness Prevention Program (IIPP). This written plan must describe your workplace's health and safety program and how you will implement the following eight elements that are required by the Cal/OSHA standard:

- Assignment of the responsibility for safety
- Assessment of workplace hazards
- Investigation of accidents, occupational injuries and

occupational illnesses

- Correction of hazards
- Communication with employees and methods for involving them in safety-related activities
- Occupational safety and health training
- Systems for ensuring employee compliance with safety procedures
- Recordkeeping and documentation of your program and program activities.

Employers or businesses, or anyone who falls under the definition of a 'person conducting a business or undertaking' (a PCBU), has legal obligations under work health and safety laws.

A register of injuries must be kept for workers to record workplace injuries or illnesses.

The register of injuries may be kept in writing or be electronic (like on a computer).

Having a register that all workers can access will help them raise any safety issues they have. It can also help you develop new safe work procedures.

There are penalties for failing to keep a register of injuries.

What to include in your injury register?

The register of injuries must include:

- the name of the injured worker
- the worker's address
- the worker's age at the time of injury
- the worker's occupation at the time of injury
- the industry in which the worker was engaged at the time of injury
- the time and date of injury
- the nature of the injury
- the cause of the injury.

Employers across the United States have implemented injury and

illness prevention programs, and many jurisdictions, in the United States and abroad, currently require or encourage implementation of these programs. Currently, 34 U.S. states have established laws or regulations designed to require or encourage injury and illness prevention programs, including 15 states with mandatory regulations for all or some employers.⁵ Other states, while not requiring programs, have created financial incentives for employers to implement injury and illness prevention programs. In some instances, this involves providing – or facilitating – workers’ compensation insurance premium reductions for employers who establish programs meeting specified requirements. And 16 states, in all three of these groups, provide an array of voluntary guidance, consultation and training programs, and other assistance aimed at helping and encouraging employers to implement injury and illness prevention programs. Depending on the state, these programs apply to all employers, employers above or below a certain size threshold, employers with injury and illness rates above industry average, employers in “high-hazard” industries or employers with above-average workers’ compensation experience modification rates.

STATISTICS

In the four decades since the *Occupational Safety and Health Act* (OSH Act) was signed into law, workplace deaths and reported occupational injuries have dropped by more than 60 percent. Yet the nation’s workers continue to face an unacceptable number of work-related deaths, injuries and illnesses, most of them preventable:

- Every day, more than 12 workers die on the job – over 4,500 a year.
- Every year, more than 4.1 million workers suffer a serious job-related injury or illness.

Are American Workers in Danger? OSHA Reports Dramatic Increase in Fatal Occupational

Injuries

The Bureau of Labor Statistics' Census of 2016 Fatal Occupational Injuries reports there were 5,190 workplace fatalities in 2016, a seven percent increase from 2015, and notes that opioid-related deaths are on the rise in the workplace.

Fatal workplace injuries showed a dramatic uptick in 2016, rising by 7 percent over the number of workplace fatalities tallied in 2015. The fatal injury rate also increased from 3.4 per 100,000 full-time equivalent workers in 2015 to 3.6 in 2016.

More workers lost their lives in transportation incidents than any other event in 2016, accounting for about one out of every four fatal injuries. Workplace violence injuries increased by 23 percent, making it the second-most common cause of workplace fatality. The Dec. 19 report also shows the number of overdoses on the job increased by 32 percent in 2016, and the number of drug-related fatalities has increased by at least 25 percent annually since 2012.

"Today's occupational fatality data show a tragic trend with the third consecutive increase in worker fatalities in 2016 – the highest since 2008. America's workers deserve better," says Loren Sweatt, deputy assistant secretary for OSHA. "[OSHA] is committed to finding new and innovative ways of working with employers and employees to improve workplace safety and health. OSHA will work to address these trends through enforcement, compliance assistance, education and training and outreach." In 2008, 5,214 workers lost their lives.

"The increase in job fatalities in 2016 reported by BLS shows that for many groups of workers in this country work is becoming more dangerous and deadly," says Seminario. "The 5,190 workplace deaths from injuries means that 14 workers were killed on the job a day, the highest number since 2008 and the highest rate since 2010."

"Federal OSHA now has fewer than 800 inspectors and can inspect workplaces on average only once every 159 years," says Seminario, who points out that OSHA's budget has declined since 2010 and been

frozen for years.

The National Safety Council (NSC) released a statement indicating it “is very disheartened to see the latest data from the Bureau of Labor Statistics showing a seven percent rise in workplace deaths since 2015. Fatal work injuries reached 5,190 in 2016 – the third consecutive annual increase and the first time in nearly a decade that the number has surpassed 5,000. Employers cannot ignore this data, particularly since many different demographics are affected.”

Of note, said NSC, were these numbers:

- Overdoses from the non-medical use of drugs or alcohol while on the job increased from 165 in 2015 to 217 in 2016, a 32 percent increase.
- Deaths among workers aged 55 or older totaled 1,848 – a 9.9 percent increase.
- Deaths among black or African-American, non-Hispanics increased 18.6 percent, totaling 587.
- Deaths among Asian, non-Hispanic workers increased 40.4 percent, totaling 160 deaths.
- Fall, slip and trip deaths increased 6 percent, totaling 849 deaths.
- Transportation incidents remained the most common fatal event, totaling 2,083 deaths.
- Unintentional workplace deaths increased 5 percent, totaling 4,399 deaths.
- Homicides increased 19.9 percent now totaling 500 deaths.

“ **Falls:** Approximately 36.5% of all deaths in the workplace occurred due to employees falling. These includes workers who have fallen due to unprotected sides or holes, improperly constructed walking or working surfaces, workers who have fallen off ladders, roofs, scaffolding, large skyscraper construction areas, etc., all due to failure to use proper fall protection. Incorporating the OSHA fall protection requirements would resolve these issues, which includes 1910.269(g)(2) Fall Protection.

- **Struck by an Object:** An estimated 10.1% of deaths occurred

due to swinging, falling, or misplaced objects. These also include falling objects due to rigging failure, lose or shifting materials, equipment malfunctions, and vehicle or equipment strikes.

- **Electrocutions:** About 8.6% of employees died due to electrocution. Workers face a number of electrocution risks on construction sites, such as exposed wiring, wet conditions while outlets are exposed, etc. These are caused by contact with overhead power lines or energized conductors or circuit parts in electrical panels and equipment panels, poorly maintained extension cords and power tools, as well as lightning strikes. Strict adherence to OSHA 1910.331-.335, 1910.269, and NFPA 70E *Standard for Electrical Safety in the Workplace* would prevent these accidents.
- **Caught-in or Caught-between:** Employees caught in or between machines, devices, or tools causing death accounted for about 2.5% of deaths. These also include trench or excavation collapses, as well as workers caught between moving or rotating equipment, or caught in collapsing structures or materials.

The 2017 OSHA Top 10 Citations provide another insight into the causes of worker injuries and fatalities.

1. Fall Protection – General Requirements (1926.501): 6,072 violations
2. Hazard Communication (1910.1200): 4,176 violations
3. Scaffolding (1926.451): 3,288 violations
4. Respiratory Protection (1910.134): 3,097 violations
5. **Lockout/Tagout (1910.147): 2,877 violations**– frequent violations were inadequate worker training and inspections not completed. Lockout/tagout procedures are meant to safeguard employees when machinery starts up unexpectedly or when hazardous energy is released during maintenance activities. Failing to train workers or conduct periodic inspections account for many of the violations.
6. Ladders (1926.1053): 2,241 violations
7. Powered Industrial Trucks (1910.178): 2,162 violations
8. Machine Guarding (1910.212): 1,933 violations

9. Fall Protection – Training Requirements: 1,523 violations
10. **Electrical – Wiring Methods (1910.305): 1,405 violations**–Violations of this standard were found in most general industry sectors, including food and beverage, retail, and manufacturing. Faulty electrical wiring methods accounted for 1,405 violations–down from 1,937 in 2016. Frequent violations include improper use of extension cords.

Death on the Job: The Toll of Neglect, 2019

April 25, 2019

This 2019 edition of “Death on the Job: The Toll of Neglect” marks the 28th year the AFL-CIO has produced a report on the state of safety and health protections for America’s workers. This report features national and state information on workplace fatalities, injuries, illnesses, the number and frequency of workplace inspections, penalties, funding, staffing and public employee coverage under the Occupational Safety and Health Act. It also includes information on the state of mine safety and health.

Contractor Safety

INCIDENT

A former Naples framing contractor is headed to prison for violating federal fall protection standards.

A U.S. district judge in Fort Myers has sentenced Stalin Rene Barahona, the former owner of the now dissolved SB Framing Services Inc. in Naples, to 30 days in prison for one count of willfully violating a federal standard for fall protection.

Barahona pleaded guilty to the charge, under the information brought by the U.S. Attorney’s Office.

The charge stemmed from a fall that killed one of

Barahona's employees during work on a new home in North Naples, within Marbella Isles, a luxury community by GL Homes off Livingston Road.

The fall happened Sept. 26, 2015, hours after Barahona drove two of his employees to the job site.

According to court records, one of those employees, Selvin Velasquez, a residential framer, lost his balance after leaning over a rake beam to drill a hole in a concrete block while working on the roof, then fell to the ground from 19½ feet, striking his head on a concrete slab. Velasquez was taken to a hospital, where he later died of his injuries.

Barahona will begin serving his sentence Feb. 26.

"This enforcement action demonstrates that OSHA will utilize every resource available to ensure that safety and health standards are followed to protect employees from potential risk," said OSHA Regional Administrator Kurt Petermeyer in Atlanta, in a news release.

OSHA determined that Velasquez, 32, would not have died from the fall if the required fall protection equipment had been provided.

According to court records, Barahona saw Velasquez and his other employee working on the roof without the proper equipment but "failed to intervene to ensure his workers' safety." Although the contractor owned the equipment, it sat in his truck unused on the day of the fatal fall.

OSHA found that in the weeks leading to Velasquez's death, including on the day of the fall, other contractors warned Barahona repeatedly about his employees not wearing the required equipment on the job.

OSHA also found that Barahona, an experienced carpenter, had spent 15 years in the construction industry and had taken an eight-hour OSHA worker safety course while working as a foreman with his last employer, so he should have known about the dangers.

Barahona signed a plea deal in July 2019, giving up his right to a trial by jury. As part of the deal, he paid a special assessment of \$10 to the court.

Based on the charge, he could have received a maximum prison sentence of six months and faced a fine of up to \$250,000.

Barahona's agreement doesn't include a fine, which according to the judgment has been waived.

The judgment won't require any restitution.

In January 2016, OSHA stated in a news release that it had cited SB Framing Services with one willful and one serious violation.

The company's failure to provide workers with a workplace safety training program resulted in a serious violation, while the one leading to an employee's death was categorized as willful. At the time, proposed penalties totaled \$53,900.

OSHA records show that Barahona reached an informal settlement with the agency in January 2016. Fines were reduced to \$43,120 for the two violations.

According to court records, A&C Construction and USI Contractors hired SB Framing as a subcontractor to install sheathing and framing at the new Marbella Isles development.

Court records show the job the company landed at Marbella Lakes was its first contract after incorporating. SB Framing began operating in August 2015 and had five employees.

The state administratively dissolved the company Sept. 23, 2016, after it failed to file an annual report.

The court recommended Barahona serve his sentence close to home, but it appears that likely won't be the case.

Naples attorney Neil Morales, who represents Barahona, said his client has been assigned to a medium-security private prison, the D. Ray James Correctional Institution, in Folkstown, Georgia, and he is concerned for his safety.

For a first offense such as this one, Morales said Barahona should be doing his time in Glades or Charlotte counties, where there are minimum-security detention centers that would give him more freedom and not put him with felons who have committed more serious crimes, such as thefts and assaults.

Morales describes Barahona as a hard-working family man who is sorry for making mistakes that led to his employee's death. His employee, he said, was also a friend.

Barahona, he said, gave up his business because of the incident and went to work for another construction company, where he would not have responsibility over other workers anymore, realizing there was more to the job than he expected.

"He's not the kind of person that would ever do this again, or let this happen again," Morales said.

Barahona appreciates that he was offered a plea deal, his attorney said, but he should not be treated any differently from others who have been found guilty of similar violations but not faced prison time.

"I think they're trying to make an example of him," Morales said. "I was hoping they would give him a suspended sentence."

Barahona also fears deportation, Morales said. He is a Honduran national, who has been in Florida legally for decades under a temporary protective status, but it must be renewed annually.

"Based on everything we've studied about this and everything that we've seen, this is not a deportable offense," Morales said. "It doesn't make him an inadmissible alien."

Velasquez's family did not seek any restitution, Morales said, realizing that Barahona is a good man who made some bad decisions.

NEED TO KNOW

When contractors perform services at employer worksites, a detailed contract and contractor safety program protects the health and safety of both employees and contractors. The employer

and the contractor share an obligation to communicate planned work activities, the hazards involved, and the contracted tasks, as well as the training, tools, and equipment that all employees will need.

BEFORE AGREEING TO WORK WITH A CONTRACTOR, REVIEW THE FOLLOWING DATA THAT GIVES INSIGHT TO THEIR SAFETY CULTURE AND PERFORMANCE:

- History of safety and environmental regulation violations.
- Injury and loss history.
- Total Recordable Incident Rate.
- Experience modification rate (ex-mod).
- Job and task hazard analysis procedures and results.
- Written safety programs and policies.

ENSURE THAT YOU OUTLINE REQUIREMENTS IN THE WORK CONTRACT AND IN CONTRACTOR MANUALS SO THERE IS A CLEARLY COMMUNICATED EXPECTATION OF WORKPLACE SAFETY. TOPICS TO CONSIDER INCLUDE:

- Company and contractor safety responsibility and emergency contact information.
- A description of hazardous areas, equipment, materials, and tasks at the worksite.
- Safety programs that govern the safe work practices for the contracted job.
- Equipment, tools, and supplies that the contractor or the employer need to provide.
- Personal protective equipment ([PPE](#)) required at the worksite and for job tasks.
- Training and certifications that contracted employees need prior to conducting work.
- Reporting requirements and procedures for injuries, illnesses, hazards, and safety concerns.
- The expectation for a drug and alcohol free workplace.

IT IS IMPORTANT THAT CONTRACTORS MATCH OR EXCEED THE SAFETY CULTURE AND STANDARDS OF THE EMPLOYER. GENERAL SAFE WORK PRACTICES TO EMPHASIZE INCLUDE:

- [Lockout/Tagout](#) procedures for equipment on-site.
- A list of permit-required and non-permit-required confined

spaces on-site.

- Heat illness prevention procedures.
- Trenching and excavation procedures and the location of utilities.
- A list of chemicals used on-site and access to safety data sheets.
- Areas where fall protection is required.
- Vehicle, driving, and traffic safety rules for the worksite.
- Good housekeeping methods.
- Worksite safety inspection processes and frequency of inspections.
- Worksite security procedures.
- Personal conduct requirements.

TRAINING IS IMPORTANT TO FAMILIARIZE EMPLOYEES WITH HOW TO CONTROL JOB HAZARDS AND PREVENT INJURIES. SUGGESTED INITIAL AND ONGOING TRAINING TOPICS INCLUDE:

- A worksite safety orientation including a discussion of the hazards associated with the tasks of the job to be performed.
- The contents of contractor safety manuals.
- Pre-job briefings and shift meetings.
- Safety tailgate topics specific to the worksite and job tasks.
- Trainings that are required to control a hazard, condition, or behavior.

ENSURE THAT YOU TRAIN GENERAL CONTRACTORS ON THE WORKSITE-SPECIFIC EMERGENCY PROCEDURES AND EQUIPMENT. Knowledgeable employees and contractors can cooperate and make fast, quality decisions if they are prepared before an emergency occurs. The following topics and procedures at a minimum should be provided to employees and contractors:

- Fire prevention and evacuation plans.
- Emergency spill response and procedures.
- Exit routes and assembly areas for emergency evacuations.
- The location of emergency equipment such as fire extinguishers, first aid kits, and rescue equipment.

- Emergency contacts and communication methods.
- Rescue and medical duties for those employees who are to perform them.

Establishing clear expectations, communication, training, and monitoring all help employers and contractors work together to complete their jobs safely while also protecting the safety and health of all affected employees.

In today's economy, an increasing number of workers are assigned by staffing agencies to work at specific **HOST WORKSITES** under the direction and control of the **HOST EMPLOYER**. Examples include seasonal workers, such as delivery drivers and warehouse workers, who may be placed in both short- and long-term assignments. In these situations, it is important for the staffing agency and the host employer to communicate and coordinate to provide and maintain a safe work environment for their workers.

In other situations, some workers are employed by a **host employer** and others by a contractor or subcontractor. Examples include electrical or mechanical contractors working in a facility, a vendor installing or maintaining equipment, or long-term contractors providing building cleaning and maintenance. OSHA refers to these as "multiemployer" worksites. In these circumstances, it is important that each employer and contractor consider how its work and safety activities can affect the safety of other employers and workers at the site.

In both temporary worker and multiemployer situations, safety is enhanced if employers establish mechanisms to coordinate their efforts and communicate effectively to afford all workers equal protection against hazards. These mechanisms include measures to ensure that all workers on site (and their representatives) can participate in preventing injuries and illnesses. Failure to take these steps may undermine safety programs. For example, if the different employers have inconsistent policies for when and where to wear personal protective equipment, workers may mistakenly believe that the equipment is not needed, leading to injury. Inconsistent safety policies may also cause workers to question the credibility of safety and health programs, resulting in less

meaningful employee engagement and participation.

EFFECTIVE COMMUNICATION AND COORDINATION AMONG SUCH EMPLOYERS MEANS THAT, BEFORE COMING ON SITE, CONTRACTORS AND STAFFING AGENCIES AND THEIR WORKERS ARE AWARE OF:

- The types of hazards that may be present.
- The procedures or measures they need to use to avoid or control their exposure to these hazards.
- How to contact the host employer to report an injury, illness, or incident or if they have a safety concern.

IT ALSO MEANS THAT HOST EMPLOYERS AND THEIR WORKERS ARE AWARE OF:

- The types of hazards that may arise from the work being done on site by workers employed by contractors or staffing agencies.
- The procedures or measures needed to avoid or control exposure to these hazards.
- How to contact the contract or staffing firm if they have a safety concern.
- What to do in case of an emergency.

BUSINESS / REGULATION

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees.

The federal act requires that employees involved in residential construction activities 6 feet or more above lower levels must be protected by a guardrail, safety net or personal fall arrest system, such as a body harness.

A Florida construction company was issued willful citations alleging failure to provide cave-in protection to employees working inside an excavation that contained unstable soil, and allowing excess soil to be placed too close to the edge of a trench wall. The company was also issued serious citations alleging failure to adequately train employees, exposing workers to hazards from ductile iron pipe being lifted overhead and

allowing employees to use a ladder of insufficient length on an unstable surface. Proposed penalties total \$155,000.

1. All contract employees performing work for PPG must adhere in detail to the **Safety, Health and Security rules**. The contractor will remove and replace any contract employee who fails to comply with these rules. All interpretations will be made by the designated representative for PPG INDUSTRIES.
2. PPG INDUSTRIES' General Terms and Conditions shall apply to all contractor work.

3. General

1. The contractor and his employees shall comply with all federal, state and local safety regulations.
2. The use of or the possession of alcoholic beverages or nonprescription drugs is not permitted on PPG premises.
3. All unusual incidents should be reported immediately to the PPG representative, (accidents, damage to property, etc.)
4. A 24-hour phone number will be left with the PPG representative while the contractor has workers or material on PPG Premises. Likewise, a 24-hour PPG number will be supplied to the contractor representative.
5. Before starting any excavations, the contractor must consult with the PPG representative for all known underground utilities or other pipe lines or tanks.
6. All hazardous openings or excavations must be barricaded at all time unless the work requires their temporary removal. The area will be lighted one hour before sunset till one hour after sunrise.
7. While overhead work is being performed, signs must be posted in a conspicuous manner "Danger – Work Overhead". If sparks from cutting, etc., or other materials are falling, the area below must be roped off completely.
8. Work shall not be performed under or immediately adjacent to loads being hoisted and all loose items of equipment or material shall be secured from falling.

9. No riders are permitted on moving equipment, rigging or loads.
10. Guylines must be clearly marked where they cross the travel space of paths, walkways or roadways. K. Fire doors must not be blocked or fastened open. Wires, cables or hoses, etc. shall not pass through a doorway and prevent the fire door from closing completely.
11. Acetylene, oxygen, nitrogen and other compressed gas cylinders must be securely fastened in an upright position.
12. Jumping from docks, trucks or other platforms is prohibited.
13. Do not use packages, drums or other items in place of ladders.
14. Do not run.
15. The contractor shall report any malfunction or potential safety hazard to the PPG representative.
16. The contractor is responsible for noting the clearance under pipe racks, conduit racks, doors, ramps and other such overhead obstructions and reconciling any possible interference with equipment.
17. The contractor shall observe the facility speed limits when moving any type of vehicle.
18. Contractor personnel shall not connect to, adjust or otherwise tamper with PPG equipment.
19. The possession of any type of weapon on PPG property is prohibited.
20. Under no circumstances should a contractor employee enter a tank or confined space without first having obtained a Confined Space Entry permit. This permit is available through the PPG representative.

STATISTICS

According to the most recent OSHA statistics available, 5,250 workers died on the job in 2018, or more than 100 a week. Out of 4,779 worker fatalities in private industry, 1,008 – or more than 21% – happened in construction. The leading cause of death, excluding highway collisions, in construction? Falls.

Criminal prosecutions are rare under the law that established OSHA, but they have been on the rise in recent years, along with the number of fines levied, due to changes made during the Obama administration.

According to the latest “Death on the Job” report by the AFL-CIO released in April 2019, only 99 worker death cases had been prosecuted criminally under the federal act since its passage. The report found that OSHA resources still are lacking and penalties are still too weak, with “much work remaining to be done.”

According to a [report from ISN Analytics](#), the use of contractors and the outsourcing of work continue to grow. About 42% of organizations plan to increase their outsourcing.

Almost half of the surveyed contractor hiring organizations reported that between 40% and 100% of their on-site work is completed by contractors, and 23% of organizations use over 1,000 contractor companies. In 55% of organizations, the EHS department owns the contractor management process.

These figures highlight the growing need to improve [contractor safety management](#) in order to better safeguard the safety of a workforce, employee and contractor alike. The safety performance of contractors and subcontractors has a great impact on the safety performance of hiring organizations.

World-Class Organizations Assess Contractor Safety Statistics

Since contractors have a great impact on the safety of workforces and the safety performance of hiring organizations, companies can't afford to select the wrong ones. To mitigate the risk, you can use a contractor prequalification service, or implement a contractor management system in your own organization.

One way to make sure that the right contractors are selected is to evaluate them on their safety statistics. According to research by the National Safety Council's Campbell Institute on [best practices in contractor management](#), all 14 world-class organizations in EHS

included in the study assess contractors on their safety statistics, including:

- Experience Modification Rate (EMR)
- Total Recordable Incident Rate (TRIR)
- Fatality Rate
- Days Away, Restricted or Transferred (DART) rate
- Other OSHA recordables

All firms included in the research require contractors to submit these statistics for a given time period, typically the last three years.

RECOMMENDATIONS

It is recommended that the following procedures be implemented to ensure the safety and health of all parties. **Action item 1: Establish effective communication**

Each **host employer** establishes and implements a procedure to ensure the exchange of information about hazards present on site and the hazard control measures in place. Thus, all workers on the site are aware of worksite hazards, and the methods and procedures needed to control exposures to them.

How to accomplish it

- The **host employer** communicates with contractors and staffing agencies to determine which among them will implement and maintain the various parts of the safety and health program, to ensure protection of all on-site workers before work begins. These determinations can be included in contract documents that define the relationships between the parties.
- The **host employer** establishes and implements procedures to exchange information with contractors and staffing agencies about hazards present in the workplace and the measures that have been implemented to prevent or control such hazards.
- The **host employer** gathers and disseminates information sufficient to enable each employer to assess hazards encountered by its workers and to avoid creating hazards that affect workers on the site.

- **Contractors and staffing agencies regularly give the host employer** any information about injuries, illnesses, hazards, or concerns reported by their workers and the results of any tracking or trend analysis they perform.
- Each **contractor** establishes and implements a procedure for providing the **host employer** with information about the hazards and control measures associated with the work being done by its workers and the procedures it will use to protect workers on the site.
- The **host employer** gives contract employers and staffing agencies the right to conduct site visits and inspections and to access injury and illness records and other safety and health information.
- The **host employer** communicates with **contractors** and staffing agencies and their workers about nonroutine and emergency hazards and emergency procedures.
- Information is communicated before on-site work starts and, as needed, if conditions change.

Action item 2: Establish effective coordination

Host employers, contractors, and staffing agencies coordinate on work planning, scheduling, and resolving program differences to identify and work out any concerns or conflicts that could impact safety or health.

How to accomplish it

Host employers:

- Include in contracts and bid documents any safety-related specifications and qualifications and ensure that contractors and staffing agencies selected for the work meet those requirements.
- Identify issues that may arise during on-site work and include procedures to be used by the host employer and contractors and/or staffing agencies for resolving any conflicts before work starts.

Host employers coordinate with contractors and staffing agencies to:

- Ensure that work is planned and scheduled to minimize impacts on safety.
- Ensure that staffing agency workers are adequately trained and equipped before arriving on the worksite.
- Harmonize their safety and health policies and procedures to resolve important differences, so that all workers at the site have the same protection and receive consistent safety information.

Host employers and staffing agencies:

- Work together to deal with unexpected staffing needs by ensuring that enough trained and equipped workers are available or that adequate lead time is provided to train and equip workers.
- Make sure that managers with decision-making authority are available and prepared to deal with day-to-day coordination issues.

PREVENTION

Contractors fill one of every five jobs in the United States and are expected to make up nearly half our workforce within the next decade. They bring with them varying degrees of occupational health and safety knowledge, training and experience, making it difficult for organizations to manage workplace safety.

To mitigate the risks associated with disparate, and potentially inadequate safety training of contractors who work on their behalf, more than 75% of companies in a recent NAEM safety management benchmarking discussion plan to advance their contractor safety programs. It's for good reason: Preliminary OSHA reports show that organizations across industries and trades continue to fall short when addressing critical safety hazards, including the use of personal protective equipment, operation of machinery and industrial trucks, and fall protection, among other hazards.

A strong contractor safety program—one that prequalifies contractors before they are hired and monitors and manages ongoing safety performance—can ensure that contractors are adequately

equipped to mitigate hazards. This can help to prevent worker injuries, protect corporate reputation, support compliance with government regulations, and avoid hefty fines associated with violations.

Business drivers for creating a more strategic contractor safety management program include the following:

- Rising safety incident or injury rates.
- Regulatory requirements.
- Benchmarking best practices.
- Environmental, social and governance reporting/stakeholder expectations.
- Enterprise risk management.

Here are five best practices for mastering contractor safety management with dedicated, strategic programs that extend throughout your entire supply chain. Leveraging them can help you build a more comprehensive, effective program to better protect the people on your job sites and, in turn, your business.

1. Ensure that safety and expectations are communicated through induction training.

Safety training is one of the most impactful tools companies have for sharing their safety culture throughout their workforce, including their contracted workers. What better way to ensure your workforce's safety readiness than to train them before they set foot on a job site?

Onboarding or induction training communicates safety expectations and trains workers to safely perform job duties before they come to work. Typically instructor-led, the detailed training efficiently and effectively prepares contractors to safely operate machinery and understand how to mitigate the unique safety hazards of their jobs.

It often includes the company's safety and emergency procedures, work permits, and site requirements. Requiring contractors to complete induction training provides assurance that they are prepared with the most effective, relevant training for the jobs

they are hired to do. Use of badging or other technology-based tools to enable easy verification of training completion before a contractor goes to work is key to ensuring compliance.

2. Build safety requirements into contracts and accounts payable processes.

Contracts help to clearly establish your organization's expectations regarding its contractors' safety preparedness and performance. Legal contract language should require their compliance with federal, state and local regulatory requirements, along with company-specific health and safety requirements. This may include participation in the company's safety prequalification program administered through a third-party provider and maintenance of an acceptable safety score in their contractor management system.

In addition, some organizations also tie meeting contractor safety requirements into their accounts payable processes to help motivate and enforce contractor compliance. For example, when contractors don't maintain their compliance, as evidenced by an acceptable safety score in the contractor management system, payment is withheld until compliance is achieved.

3. Establish and track contractor safety KPIs.

Key performance indicators (KPIs)—such as total number of safety-related incidents and lost time rates—are one of the newest tools for advancing contractor safety.

EHS leaders rely heavily on safety metrics to create awareness of safety adherence and motivate workers to improve their performance. Many companies leverage a third-party software provider to host a digital dashboard that features the company's key safety-related KPIs for its contractors.

Clearly visible analysis of KPIs that represent safety adherence and progress can help decrease serious incident rates by holding department directors accountable for them. Regularly scheduled meetings to discuss performance metrics, including any incidents that occurred along with their root causes and corrective actions,

can help teams strategize for continued improvement.

4. Leverage audits and incorporate safety performance into post-project evaluations.

Periodic on-site inspections, jobsite walk-throughs and annual audits are effective ways to monitor contractor safety performance. These can be conducted by internal resources or some organizations leverage an outside vendor to perform these audits, supplementing their internal resources to give them more eyes in the field.

Organizations with advanced contractor safety programs go beyond contractor prequalification and monitoring by integrating safety performance into post-project evaluations and close-out conversations. The company relies on the same general contractors for various projects, so they can regularly evaluate their performance and collaborate with them on subcontractor management to monitor and continually improve safety adherence.

The results of contractor safety audits and post-project evaluations can also be shared with supply chain, providing that part of the organization with additional metrics to monitor contractor performance, manage the relationship, and make decisions regarding inclusion in future bid invitations.

5. Leverage technology and third-party vendor support.

Gathering, verifying and auditing contractors' health and safety metrics and safety programs are not quick or easy tasks. According to EHS Today's 2019 National Safety Survey, leveraging technology for assistance is one of the most prominent industry trends. Technology, such as contractor management software solutions, modernizes contractor safety management for more efficient, effective results.

Survey respondents with advanced programs rely on third-party providers with technology solutions that are backed by safety expertise to bring added capacity. A provider with expertise in contractor safety management can help standardize the prequalification process across the organization and provide clear

visibility into whether a contractor company meets its safety expectations when assessing potential hires. This type of solution also frees up internal resources by handling time-consuming collection and review of safety program information from contractors and, at the individual worker-level, can provide a clear picture of contract workers' training and readiness to work, and to help flag workers in need of additional training.

Foreman Killed in Mixer

INCIDENT

It was an overcast, chilly, Saturday morning in May 2014 when a young worker in Kentucky lost his life in an industrial incident. An investigation into his death hopefully will save the lives of workers in the future.

On that morning – May 17, 2014, at 9 a.m. – a 21-year-old foreman and two coworkers were instructed to clean a Rapidmix 400 C industrial continuous mixing plant in preparation for a job the following week. The mixing plant, which had not been used or cleaned for several months, was located in the company's lot next to the maintenance shop.

Once the foreman and two employees had cleared much of the dried, stuck-on concrete from the vein feeder, the foreman started the mixer section to remove the remaining debris, creating a cloud of dust. The foreman instructed the two employees to leave the area so they would not breathe in dust particles. He then stepped onto the mixer's metal doors, intending to exit from the opposite side of the mixer.

Four doors covering the mixing section

The two pairs of doors that covered the opening of the mixer each measured 31½ by 53 inches. Each pair of doors was hinged in the

center with two, 2-inch tall hinges. Each door opened and closed on the outer edge of the mixer unit, controlled by one interlock switch for the set of doors on the left and one interlock switch for the set of doors on the right.

Mixing Shafts

As the foreman shifted his weight onto one of the metal doors, the door collapsed into the mixer, along with the victim. By the time one of the employees hit the emergency stop switch, the young foreman was chest high in the 14-foot-long mixing shafts with 6-inch by 8-inch paddles; the shafts rotated at 110 RPM. A 911 call was placed, but the young foreman was pronounced dead at the scene.

Mixer Was in Need of Repair

The Kentucky Fatality Assessment and Control Evaluation (FACE) Program, federally funded to study occupational fatalities, investigated the case.

14 and 15, 2013, a service inspection was conducted on the mixing machine by a manufacturer's service technician. During the inspection, the service technician made several recommendations for repair:

- The mixer safety switch needed to be replaced;
- One of the interlocks for the doors was missing and needed to be replaced since the doors could be opened while the auger was running;
- The outloading conveyor motor disconnect had broken off the frame and needed to be replaced; and
- The doors had broken hinges that needed to be repaired.

Broken door hinge on the metal door, covering the mixing section

On Nov. 27, 2013, the company ordered the suggested parts for repair. However, at the time of the incident, the interlock on the door still was missing, and the door hinges still were broken.

As a result of this tragic incident and the investigation,

Kentucky FACE made the following recommendations for the prevention of future similar incidents:

- Employers should develop and implement written procedures for maintaining a Rapidmix 400 C continuous mixing plant to include pre-inspection, cleaning the mixing plant inside and out immediately after each use, making prompt repairs to broken parts such as door hinges and promptly replacing missing or damaged parts such as interlocks for the doors covering the mixing section.
- Employers should train employees on hazard recognition for all aspects of a job involving equipment such as the Rapidmix 400 C continuous mixing plant, including instructions not to walk or stand on the doors covering the auger section while operating the mixing plant.
- Employers should provide documented refresher training at least annually or prior to the mixing plant's first use each year.
- Manufacturers should consider installing a switch so that the equipment doors cannot be opened during operation.

The loss of this young foreman's life was a tragedy for both the employer and the young man's family. Kentucky FACE uses the facts gathered from investigations to formulate and disseminate injury prevention strategies, with the hope of preventing future, similar incidents.

NEED TO KNOW

The following are facts that should be enough to make every employer stop and consider their

environments and workplace incident investigations techniques:

- According to the Bureau of Labor Statistics multiple workers die every day in American workplaces.
- 4 million serious injuries occur annually, not to mention all the sickness and disease cases resulting from stress and toxins.

Is there a difference between the term "accident" and "incident"

in the context of the workplace? The term

“accident” has been used often in the past referring to an unplanned, unwanted event. Some people

suggest that “accident” was a random event that could not have been prevented!!! OSHA suggest that

nearly all worksite fatalities, injuries, illness are preventable.

The term “incident” is the appropriate term when referring to these events.

Incident reporting of all injuries including close calls is critical to the integrity of the workplace.

- It is impossible to create improved processes that protect workers if management is not aware of what kinds of problems are occurring in the workplace that may cause injury or property damage.
- The workplace is even at greater risk for a more serious incident to occur in the future if a minor incident or near miss is ignored or not reported.
- Failure for incident reporting will negate a process in which situations can be corrected to prevent similar incidents from occurring in the future.
- Employee participation in workplace safety improvement strategies will not be encouraged if incidents are not reported.

BUSINESS/ REGULATIONS

Investigation Procedure / Policy – Occupational Health and Safety Act, Section 8.1(1)

Every employer with 20 or more employees regularly employed in the Province shall establish a written health and safety program, in consultation with the committee or the health and safety representative, that includes provisions with respect to...

- (e) a system for the prompt investigation of hazardous occurrences to determine their causes and the actions needed

to prevent recurrences;

- (f) a record management system that includes reports of employee training, accident statistics, work procedures and health and safety inspections, maintenance, follow-up and investigations;

STATISTICS

The Injuries, Illnesses, and Fatalities (IIF) program produces a wide range of information about workplace injuries and illnesses. These data are collected and reported annually through the Survey of Occupational Injuries and Illnesses (SOII) and the Census of Fatal Occupational Injuries (CFOI).

The latest numbers show.

Nonfatal Injuries and Illness, Private Industry for 2018.

Total recordable cases.

2,834,500

Cases involving days away from work:

900,400

Median days away from work:

8

Cases involving sprains, strains, tears:

308,630

Cases involving injuries to the back:

142,230

Cases involving falls, slips, trips:

240,160

Total fatal injuries (all sectors):

5,250

Roadway incidents (all sectors):

1,276

Falls, slips, trips (all sectors):

791

Homicides (all sectors):

453

A total of 5,250 workers died from a work-related injury in the U.S. in 2018, up 2 percent from the 2017 total of 5,147. The fatal injury rate was unchanged in 2018 at 3.5 per 100,000 full-time equivalent workers.

Employer-reported injury and illness rate unchanged in 2018 at 2.8 cases per 100 workers

The rate of nonfatal occupational injuries and illnesses among private industry employees was unchanged for the first time since 2012 at 2.8 cases per 100 full-time equivalent workers in 2018. Workers in private industry incurred 2.8 million injuries or illnesses in 2018.

RECOMMENDATIONS

At this stage of the investigation most of the facts about what happened and how it happened should be known. This data gathering has taken considerable effort to accomplish but it represents only the first half of the objective. Now comes the key question – **why did it happen?**

Keep an open mind to all possibilities and look for all pertinent facts. There may still be gaps in your understanding of the sequence of events that resulted in the incident. You may need to re-interview some witnesses or look for other data to fill these gaps in your knowledge.

When your analysis is complete, write down a step-by-step account

of what happened (the team's conclusions) working back from the moment of the incident, listing all possible causes at each step. This is not extra work: it is a draft for part of the final report. Each conclusion should be checked to see if:

- it is supported by evidence
- the evidence is direct (physical or documentary) or based on eyewitness accounts, or
- the evidence is based on assumption.

This list serves as a final check on discrepancies that should be explained.

The most important final step is to come up with a set of well-considered **Recommendations** designed to prevent recurrences of similar incidents. **Recommendations** should:

- be specific
- be constructive
- identify root causes
- identify contributing factors

Resist the temptation to make **Only General Recommendations** to save time and effort.

For example, you have determined that a blind corner contributed to an incident. Rather than just **Recommending** "eliminate blind corners" it would be better to suggest:

- install mirrors at the northwest corner of building X (specific to this incident)
- install mirrors at blind corners where required throughout the worksite (general)

Never make **Recommendations** about disciplining a person or persons who may have been at fault. This action would not only be counter to the real purpose of the investigation, but it would jeopardize the chances for a free flow of information in future investigations.

In the unlikely event that you have not been able to determine the causes of an incident with complete certainty, you probably still

have uncovered weaknesses within the process, or management system. It is appropriate that **Recommendations** be made to correct these deficiencies.

The Written Report

The prepared draft of the sequence of events can now be used to describe what happened. Remember that readers of your report do not have the intimate knowledge of the incident that you have so include all relevant details, including photographs and diagrams. Identify clearly where evidence is based on certain facts, witness accounts, or on the team's assumptions.

If doubt exists about any particular part of the event, say so. The reasons for your conclusions should be stated and followed by your recommendations. Do not include extra material that is not required for a full understanding of the incident and its causes such as photographs that are not relevant and parts of the investigation that led you nowhere. The measure of a good report is quality, not quantity.

Always communicate your **findings and recommendations** with workers, supervisors and management. Present your information 'in context' so everyone understands how the incident occurred and the actions needed to put in place to prevent it from happening again.

Some organizations may use pre-determined forms or checklists. However, use these documents with caution as they may be limiting in some cases. Always provide all of the information needed to help others understand the causes of the event, and why the recommendations are important.

Recommendations Should Not:

1. Propose any punitive actions.
2. Propose briefing unit personnel on the accident. Such briefings are basic management responsibility and a normal function of safety managers and supervisors at all organizational levels.
3. Recommend that a new policy, regulation, or standard operating procedure is needed when established guidelines

exist but are not followed.

PREVENTION

There are obviously situations in which workers must disturb an injury or fatality scene, including these:

- You are trying to save a worker's life or relieve someone's suffering following an incident.
- You are trying to prevent serious damage or loss of property following an incident.
- You are attempting to maintain access to essential services such as water, gas or electricity.

Otherwise, you should not be entering the scene unless you have authority to do so or the investigator has concluded his or her examination of the area and given permission for workers to regain access. Tampering with an accident/incident scene to make it look as though conditions were compliant with safety regulations is extremely risky, not to mention foolish. Safety investigators can interview witnesses, including victims who survive their injuries and quickly determine that you aren't telling the truth. A lie can snowball and if you continue the deception you can be caught under a legal avalanche. Don't become part of any cover-up if a coworker asks you to lie for him or her. You've got nothing to gain and everything to lose, including your job and possibly, your freedom.

If you are first on the scene of a workplace accident, help the injured person and call for emergency medical help if required. As soon as possible, contact your supervisor and report the incident. If you witnessed what happened, write down the details of what you saw and heard. Your observations will help investigators determine what happened and how to prevent a similar incident in future.

One of the biggest challenges when you are investigating an incident is sorting out the irrelevant information from the relevant information. More specifically – determine what is relevant to what happened, how it happened, and especially why it happened.

One way to do this is by using a systematic approach to

investigate all incidents that focuses on finding the root causes. Doing so, means you can implement relevant and meaningful corrective actions.

You can use this 4-step approach to guide you. It can also be used as a training tool for members of your investigation team.

Step 1 – Preserve and Document the Scene

After you have verified the scene is safe and victims are being care for, the first step in the investigation is to secure the incident site to prevent evidence from being moved, altered, or tampered with.

- If evidence goes missing or is messed with – you are going to miss out on important clues on what caused the event.
- Use cones, tape, or barriers to physically block off the scene.
- You can use photos or videos to preserve and document the scene.

Document the incident facts:

- Date and time of incident
- Investigator
- Name/s of the injured
- Injury description
- Date, time, and location of incident

Step 2 – Collect Information

Collecting information of events leading up to the incident, the incident itself, and other important information is necessary to establish a timeline, identify victims and witnesses, and begin to uncover the initial and root causes of the incident.

One of the primary ways to gather information is to interview witnesses and the victim/s. The sooner a witness or victim is interviewed, the more accurate and candid his/her statement will be.

Set the interviewee at ease:

1. Clearly state the purpose of the investigation and interview – to learn how to prevent future incidents and *notto* blame any one person.
2. Interview witnesses separately – as least initially. A witness might say more if they aren't in the same room as their supervisor, co-worker, or the victim. The same is true for when you interview the victim.
3. Let employee know they have a right to have employee representative (e.g., labor representative) present, if available/appropriate.
4. Conduct interviews in a quiet space, although in some cases, it might make sense to interview someone at the scene of the incident. It might help them explain something better, jog their memory, or help you both put questions and responses in context.

Now you're ready to begin the interview.

1. Ask the individual to recount their version of what happened and don't interrupt them.
2. Take notes and/or record the responses; interviewee must give permission prior to being recorded.
3. Have paper and pen/pencil available for interviewee.
4. Ask clarifying questions to fill in missing information; repeat back to the interviewees the information obtained; and correct any inconsistencies.
5. Ask the individual what they think could have prevented the incident.

In addition to interviews, other sources of helpful information include:

- Equipment manuals
- Industry guidance documents
- Company policies and records
- Maintenance schedules, records and logs
- Training records (including communication to employees)
- Audit and follow-up reports
- Enforcement policies and records
- Previous corrective action recommendations

Step 3 – Determine the Root Causes

The root causes are the underlying reasons why the incident occurred. Root causes generally reflect management, design, planning, organizational and/or operational failings (e.g., employees were not trained adequately; a damaged guard had not been repaired).

If you truly want to prevent a repeat of an incident, you must go beyond the easy surface causes – “worker was careless” or “employee didn’t follow the SOP.” Focusing on the easy causes is a lazy way out and it won’t get you the answers you need to put meaningful corrective actions in place.

Remember: Investigations are not effective if they are focused on finding who to blame because they will stop at the initial incident and stop short of discovering the root causes.

Step 4 – Implement Corrective Actions

Your investigation isn’t done until all the underlying causes of the incident have been identified and corrective actions are in place.

Some of the corrective actions will be quick and easy fixes; others may take more time and planning. Some may be specific and address a root cause directly and others may be sweeping improvements to the safety program in general.

Regardless, it is important that you communicate the corrective actions throughout the workplace. Employees pay attention to what management pays attention to and what management ignores. If you ignore incidents or don’t follow through on corrective actions your employees will get the message loud and clear. Employee safety isn’t valued.

So, take time to develop appropriate corrective actions and manage them through to completion.

Toxic Air Kills Young Child

INCIDENT

In a far-reaching human rights case, Ella Kissi-Debrah could become the first person to have toxic air given as their cause of death – and finally make this silent killer visible

From a tiny office on the top floor of the old town hall in Catford, south-east London, Rosamund Kissi-Debrah is leading a campaign to push air pollution on to the political agenda as never before. It has been claimed for years that pollution caused by motor vehicles, especially diesel cars, buses and lorries, is a killer, with talk of [tens of thousands of premature deaths](#). But the number was always abstract, the identities of the dead unknown. Now, for the first time, campaigners have the name of a young victim they say died as a direct result of air pollution: Ella Roberta Kissi-Debrah, Rosamund's daughter, and if they can prove it they believe an invisible killer will become all too real.

Ella, who suffered from severe asthma, [died in 2013 at the age of nine](#). She had been suffering asthma-related seizures like the one which killed her for three years. Kissi-Debrah says her daughter, who grew up and went to school close to the busy South Circular Road in Lewisham, had cough syncope – a condition usually associated with long-distance lorry drivers who'd been driving for decades. "I couldn't work out why a nine-year-old child should have that," she tells me.

While Ella was alive, Kissi-Debrah sought a medical explanation for the condition. Now she is convinced it was related to air pollution, arguing that her daughter's lungs had been weakened over the course of her short life, with pollution spikes then triggering the attacks that repeatedly hospitalised her in the final three years. "When she first became ill, I just went to the

GP and got normal antibiotics and thought ‘a few days and that will be it’,” recalls Kissi-Debrah. “But she developed this cough and it was really strange-sounding, like a whooping cough.”

The cough persisted. On the third visit to the surgery the doctor referred her to a specialist, and eventually Great Ormond Street took over Ella’s treatment. “By New Year’s Eve 2010 she was in intensive care,” says Kissi-Debrah. “It now turns out that all we were doing for the next two years was maintaining her. She would have times when the cough disappeared, but it was never long enough.” Kissi-Debrah contends that the damage her daughter suffered to her lungs in the early years of her life condemned her to death.

Supported by the human rights lawyer [Jocelyn Cockburn](#), Kissi-Debrah is pressing for a new inquest into her daughter’s death that for the first time would make it explicit that pollution was the cause. To get a second inquest, they will need to show there is new evidence that was not taken into account at the original investigation in 2014. Step forward Stephen Holgate, professor of immunopharmacology at the University of Southampton, [who has taken a fresh look at Ella’s medical records](#) and concluded there is a “real prospect that without illegal levels of air pollution Ella would not have died”.

NEED TO KNOW

Indoor air is a lot worse than outdoor air. Many health symptoms experienced by workers are caused by indoor air pollution, which is precisely why it’s essential to keep the air inside your commercial building clean and safe. This not only promotes comfort among your employees but also protects their health.

Definition – Indoor Air Quality (IAQ)

Indoor air quality describes how the air inside a building or facility affects a person’s health, comfort, and ability to work. It’s a major concern to businesses, employees, and rental managers because indoor air can have a huge impact on the well-being and productivity of employees.

What causes poor (IAQ)?

Indoor air pollution is perhaps one of the most underrated health concerns in commercial and institutional buildings. And it isn't hard to see why. Outdoor air, when heavily polluted, can be easily noticed (dark smoke, toxic smell, and bitter taste). But indoor air is different. It hides behind the cool and comforting air blown by the AC and the calming smell of air fresheners. And because people don't see it, it's easy to dismiss the fact that it exists.

What makes indoor air polluted?

There are hundreds of air pollutants commonly found in homes and commercial facilities. Which include the following:

- **Cigarette smoke**

Even if you or your employees do not smoke inside the building, cigarette smoke can linger on the smoker's skin and clothes. That's why when a smoker enters the office, you could smell it right away. Cigarette smoke contains [more than 4000 chemical compounds](#), most of which are highly toxic and detrimental to the respiratory system.

- **Dust**

Dust and other environmental pollutants such as mites contribute to indoor air pollution. Without sufficient ventilation, these tiny pollutants can easily circulate around your office, triggering allergy **symptoms in some people**.

- **Mold and mildew**

When the temperature outside drops and the indoor air is heated, condensation can form around windows, causing moisture. High moisture content in indoor air provides the perfect environment for mold and mildew to thrive. Furthermore, if you have water damage issues in the office, there's a very high chance that mold

and mildew are present too.

▪ **Chemical pollutants**

Building materials, office equipment; furniture, wall and floor coverings, upholstery, and virtually every commercially manufactured item in your workplace emit chemical pollutants. They include polybrominated biphenyl (PBB), polychlorinated biphenyl (PCB), polyurethane, formaldehyde, and VOCs.

Why has IAQ become so important?

- Public awareness of issues which can affect the workplace environment, which have been linked to poor indoor air quality;
- Investigations into indoor pollution;
- A growing number of ventilation hygiene organizations using pressure selling tactics to persuade facilities managers to buy ductwork cleaning services; and
- Changes in the way we work and where we work, which have given rise to concern over indoor air quality, particularly in call centers.

How do you establish whether indoor air quality is good or inferior?

To monitor this, **Indoor Air Quality** should be conducted:

- Outside air: Types and amounts of dust, bacteria and gases should be measured prior to being filtered, heated or chilled. This will act as a benchmark to demonstrate that the air inside your building is at least equal to the air outside.
- Indoor air: Dust and bacteria should be measured in the workplace, to ensure that the filters are removing the majority of the contaminants from the outside air.
- Ventilation rates should also be measured, to ensure that they are satisfactory and are therefore removing contaminants such as carbon dioxide (which at high levels can cause lethargy).

- Specific gases, such as carbon monoxide and carbon dioxide, should be monitored to ensure that the levels present are within the occupational exposure limits established by HSE.

Detection – IAQ

The approaches taken to detect possible indoor air quality issues vary among organizations, but they normally include the following steps:

- Inspection of the ventilation system to see if a sufficient amount of outdoor air is taken in and properly distributed throughout the area and if the filtration systems are working.
- Ruling out possible triggers of symptoms such as thermal comfort, noise, ergonomics, poor lighting, etc.
- Testing for the presence of air pollutants (mold, asbestos, carbon monoxide, other chemicals, and toxic gases). This can be done using air testing kits. Samples are then submitted to the lab for analysis.

Health Effects of IAQ

- Symptoms related to poor IAQ are varied, depending on the type of contaminant. They can easily be mistaken for symptoms of other illnesses. The usual clue is that people feel ill while inside the building, and the symptoms go away shortly after leaving the building.
- Symptoms such as headaches, fatigue, trouble concentrating, and irritation of the eyes, nose, throat, and lungs are typical. Also, some diseases have been linked to specific air contaminants or indoor environments, such as asthma with damp indoor environments.
- Whenever excessive moisture is present within the workplace, bacteria, mold, and fungi can grow and can lead to respiratory issues such as allergic reactions, asthma, coughing, wheezing, shortness of breath, sinus congestion, sneezing, nasal congestion, and sinusitis. Asthma is both caused by and worsened by dampness in the building.
- OSHA suggests that a proactive approach be taken to address

IAQ concerns. Failure to respond expeditiously and effectively to IAQ concerns can quickly lead to more numerous or serious adverse health issues.

BUSINESS / REGULATION

The **Environmental Protection Agency's (EPA)** [Air Quality Index](#) identifies the ranges that constitute “good,” “very unhealthy,” or “hazardous” air, based on the levels of fine particulate matter in the air that are small enough to seep deep inside the lungs. To address these issues, the EPA suggests [certain measures](#) to fight indoor air pollution like purchasing brand new HVAC systems or energy-efficient appliances. It's a rather useless list of bullet points, though: Many people do not have the funds readily available to make these investments.

Both **California and New Jersey** have taken specific steps to address indoor air quality problems. The **California Air Resources Board** first [implemented regulations](#) in 2005 after University of California scientists conducted studies about the relationships between indoor and outdoor air. They found that “indoor air pollution is not currently well addressed by governments at the national, state, or local level,” and that household air cleaners are often leaders in harmful emissions to the ozone layer. Yet the state hasn't done much since. The Air Resources Board website says that the most effective way to limit indoor air pollution is to “[minimize the release of indoor pollutants in the first place.](#)” That observation really doesn't help homeowners.

New Jersey regulates indoor air quality in “buildings occupied by public employees during regular work hours.” When asked about indoor air regulatory developments on homes, a New Jersey Department of Health spokesman directed the *Prospect* to the workplace air quality [regulations](#)—which were implemented in 2007.

Several studies by the U.S. **Environmental Protection Agency (EPA)** regarded indoor air pollution as a major problem. While most commercial buildings don't have severe issues, even the most well-maintained buildings can have episodes of poor indoor air.

According to the **EPA**, poor indoor air quality can lead to productivity problems and increased absences among employees. It is estimated that all these health consequences cost the government billions of dollars each year due to medical care and productivity loss.

Legislative Requirements

Under the Health & Safety at Work Act etc. 1974 and the Occupiers Liability Act 1984, an employer has a duty of care to ensure that a safe and healthy environment is provided. The Approved Code of Practice accompanying the Workplace (Health, Safety and Welfare) Regulations, states that indoor air quality should be at least equal to, but ideally better than, the air outside your building. HSE document EH40 contains a list of maximum exposure limits and occupational exposure standards for specific gases as required by the Control of Substances Hazardous to Health (COSHH) Regulations.

Regulation 6 of the workplace (Health, Safety and Welfare) Regulations states that: "Effective and suitable provision shall be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air." The ACOP also states that "The air which is introduced should, as far as possible, be free of any impurity which is likely to be offensive or cause ill health". Regulation 7 relates to 'Temperature in indoor workplaces' and Regulation 8 states that "lighting should be sufficient to enable people to work, use facilities without experiencing eye-strain, and safely move from place to place".

Although the **Workplace Regulations** state that ventilation systems should be kept clean, they DO NOT state the frequency at which they should be cleaned. As long as you can demonstrate to the enforcement agencies that you are monitoring the quality of the air (and that your indoor air quality is good), you will be complying with these Regulations. **OSHA** responds to questions about standards with letters of interpretation. **OSHA's letters of interpretation** specifically addressing IAQ issue can be found in Other Resources. The **General Duty Clause of the OSHA Act** (the law that created OSHA) requires employers to provide workers with a safe workplace that does not have any known hazards that cause or

are likely to cause death or serious injury.

Takeaway

The number of people suffering from illness linked to poor air quality is unlikely to decline without decisive regulatory measure by federal and state officials. For now, most people are at the mercy of airborne chemicals and toxic fumes interacting in ways that are difficult for the average person to understand or control—which means Americans will have to follow Benjamin Franklin's suggestion to open the window, if possible, just to be safe.

STATISTICS

About 200,000 Americans are thought to die from air pollution each year, but scientists previously couldn't pinpoint the specific causes of death for almost half of those people.

The new research reviewed the medical records of veterans who died and compared them with the air pollution levels in their zip codes. They focused on PM 2.5, or inhalable particulate matter pollution that is 2.5 micrometers or smaller – a fraction of the width of a human hair.

They linked nine causes of death with the pollution: cardiovascular disease, cerebrovascular disease, chronic kidney disease, chronic obstructive pulmonary disease, dementia, type 2 diabetes, hypertension, lung cancer and pneumonia.

Three of those conditions were newly identified associations: **chronic kidney disease, hypertension and dementia.**

Miles Keogh, the executive director of a group that represents state and local air regulators, said: "We know people are harmed from exposure levels lower than the [current standards].

"The question is whether the trade-offs for society are worth it. If only a few people are harmed, maybe society accepts the risk," Keogh said. "But when a study shows 99% of death occurring at exposure levels below that threshold, that should make us look

much harder at whether the threshold protects people effectively enough.”

Because scientists cannot ethically expose subjects to air pollution and test the results, they must rely on existing epidemiological data. Veterans offered a massive source of detailed records held by the federal government.

In the United States, indoor pollutants like radon, the second-leading cause of lung cancer, cause an estimated [20,000 deaths](#) each year. Yet the hazards posed by these silent-but-deadly cocktails of chemical pollutants in many indoor environments have been largely underregulated and underreported compared to outdoor air issues. Federal and state officials have not moved as aggressively on indoor air quality as they have on outdoor air pollution even though Americans spend [90 percent](#) of their time indoors, often in airtight environments.

Indoor pollution costs California \$50 billion each year in medical expenses, lost worker productivity, and premature deaths. In 2013, World Health Organization experts estimated that California should plan for [over 200 new cancer cases](#) as a result of carcinogens from indoor air contaminants (primarily VOCs). Los Angeles is one of the most car-clogged cities in America and a leader in carbon emissions, but consumer and household products have surpassed transportation as the [dominant source](#) of VOCs in the city.

RECOMMENDATION

Based on findings here are recommendations below.

1. Maintain a communication system with employees for when building-related issues arise. Make sure to provide information on response actions to all employees, including posting exposure and environmental assessment reports. If not already formed, consider starting a health and safety committee that consists of employees, management, and maintenance. This can help increase communication between
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employees and management and help alleviate concerns.

2. Evaluate your existing housekeeping program with attention to keeping horizontal surfaces dust-free and carpet cleanliness. a. Vacuum the carpet regularly with a vacuum equipped with a HEPA filter. Ensure HEPA vacuums are well-maintained and the HEPA filters are changed according to the manufacturer's recommendations. b. Use a damp cloth or mop on nonporous surfaces rather than dry materials to clean up dust. This prevents dust from becoming airborne and resettling.
3. Follow the manufacturer's recommended maintenance schedules for the HVAC system, including replacing air filters, checking drip pans, ensuring thermostats are in working order, and checking and cleaning ventilation system dampers to ensure proper functioning.
4. Maintain indoor temperature and relative humidity levels according to the guidelines discussed.
5. Routinely inspect the building for water intrusion and damage and correct these upon discovery. During and after heavy rains, walk through the building and check for water incursion.
6. Identify any potential sources of dampness or mold through visual inspection and make proper repairs to prevent further problems from occurring.
7. If dampness or mold is not identified during visual inspections but is suspected because of musty odors or continued health complaints, consider other methods (e.g., infrared camera or borescope) to look for hidden problems.
8. Monitor repaired areas to ensure repairs and remedial actions are effective.
9. Keep a record of when and where mold or water-damaged materials are discovered and what has been done to promptly fix the underlying problem leading to the water damage.
10. Evaluate the content or enforcement of current rules or policies surrounding personal workspaces that could be contributing to indoor environmental quality concerns, including:
11. Acceptable locations for employee food preparation, storage, and consumption, including personal refrigerators and

microwaves.

12. Employee fish tanks.

13. Fragrances in the workplace.

14. Establish an individualized management plan to relocate employees (such as at home or a remote site) who are still suffering from health implications even after response actions have been taken.

15. Encourage employees to report new, persistent, or worsening symptoms, particularly those with a work-related pattern, to their healthcare providers and, as instructed by their employer, to a designated individual at their workplace.

PREVENTION

How can one prevent the ill effects of IAQ?

For now, most people are at the mercy of airborne chemicals and toxic fumes interacting in ways that are difficult for the average person to understand or control—which means Americans will have to follow Benjamin Franklin's suggestion to open the window, if possible, just to be safe.

A preventative maintenance program includes:

- Ensure good quality and regular inspections of all critical components of the ventilation system.
- Regular inspections of all critical components of the ventilation system; regular inspections for conditions such as water leaks or stagnant water pools that would promote the growth of micro-organisms;
- Correction of any deficiencies found; repair or replacement of malfunctioning components, such as filters and belts, and cleaning of air distribution systems, ducts and dampers;
- Adequate treatment of open-water systems associated with ventilation systems, such as cooling towers and humidifiers;
- And maintenance of furnaces, space heaters and water heaters to ensure proper burning and exhausting of waste gases.

The bottom line of appropriate prevention is to maintain a clean workplace.

Conclusion

Indoor air quality should be one of the most important concerns in your workplace as it directly affects the overall health and wellbeing of your staff and employees. Poor IAQ can increase the risk of many health problems, from respiratory illnesses to infections. It can even compromise your mental health.

Lack of Housekeeping Can End Up Killing

INCIDENT

On Jan. 5, the U.S. Chemical Safety Board (CSB) released a report on the three deadly fires and explosions that occurred at a Hoeganaes Corp. plant in Gallatin, Tenn., in 2011. The report asserts that the accumulation of fine iron powder in the facility led to the explosions, and that Hoeganaes did not take necessary action to prevent these fatal events. CSB also used its report to highlight the need for an OSHA standard on **Combustible Dust**.

Five workers died and three were injured in three separate incidents at Hoeganaes Corp.'s Gallatin powdered metals plant in 2011. When fine particles of iron dust ignited on Jan. 31, two workers were burned and later died from their injuries. On March 29, a similar flash fire burned another employee. Finally, on May 27, a hydrogen explosion at the plant shook loose iron dust accumulations, which ignited and rained down on workers. The explosion and ensuing fire killed three employees and injured two others.

"The three accidents at the Hoeganaes facility were entirely preventable. Despite evidence released by the CSB and information that Hoeganaes had in its possession even before the first accident in January 2011, the company did not institute adequate

dust control or housekeeping measures,” said CSB Chairperson Rafael Moure Eraso.

According to CSB, significant amounts of the fine iron powder had accumulated over time in the facility and the company did not reduce the hazards through engineering controls and basic housekeeping. Furthermore, the investigation found that Hoeganaes did not institute procedures such as combustible gas monitoring or provide training for employees on avoiding flammable gas fires and explosions. CSB also found that the company did not require atmospheric testing for hydrogen or other explosive gases.

NEED TO KNOW

Housekeeping at work is as important as it is at home, especially if you want a safe workplace. People who must function every day in a messy, disorderly work environment have lower morale, although they may not be aware of the cause. But the safety ramifications of poor housekeeping in the workplace are even more important.

Poor housekeeping may result in employee injuries or even death, citations by the Occupational Safety and Health Administration (OSHA) (or another regulatory agency) and even difficulty in securing future work. How can such a seemingly “minor” issue such as housekeeping have such serious consequences?

Poor housekeeping practices can result in:

- Injuries when employees trip over, strike or are struck by out-of-place objects.
- Injuries from using improper tools because the correct tool can't be found.
- Lowered production because of the time spent maneuvering over and around someone else's mess and time spent looking for proper tools and materials.
- Lack of future work due to a reputation for poor quality.

General housekeeping rules to remember:

- Housekeeping is everyone's responsibility!

- Clean up after yourself. Pick up trash and debris and dispose of it properly. Keep your work area clean throughout the day, minimizing the time needed to clean a larger mess at the end of the day.
- Dispose of combustibles and flammables properly. If improperly discarded, they will increase the potential for a fire.
- Remove protruding nails and other sharp objects or hammer them flat to prevent someone from being injured by them.
- Stack materials and supplies in an orderly manner and secure them so they won't topple.
- Report all slips, trips and falls, with or without injury, so the hazard can be corrected.
- Remove any cords or cables in walking areas.
- Organize cables under desks.

MORE CONSEQUENCES OF POOR HOUSEKEEPING

- A trip or fall over lines and leads in walkways and work areas
- A slip or fall on an oily or slippery facility floor, vessel deck or another working surface
- A trip or fall from a dock or vessel
- An allergic reaction to a spilled chemical
- An eye injury from falling grit left in the overhead of a work site
- A fire as a result of oily rags left in an area where hot work is performed, or due to the accumulation of combustible dust
- Illness due to the unsanitary conditions of restrooms
- Electrical shock as a result of poorly maintained equipment or energy sources, such as broken, cracked or damaged insulation and connections of wiring
- Lacerations and amputations when poor maintenance results in inadequate lighting
- Exposure to hazardous substances from poor storage and ineffective labeling of hazardous chemicals
- Slip hazards where snow, ice, or standing-water is left on walkways

MANAGEMENT TRAINING

Here are some results of poor housekeeping practices at work:

- Time spent investigating and reporting accidents that could have been avoided.
- Fires due to improper storage and disposal of flammable or combustible materials and wastes.
- Substandard quality of finished products because of production schedule delays, damaged or defective finishes, ill-equipped employees, etc.
- “Wall-to-wall” OSHA inspections due to the “first impression” of the compliance officer.

BUSINESS / REGULATION

Good housekeeping not only results in a cleaner workplace, but makes it safer as well. Good housekeeping reduces illnesses and injuries and promotes positive behaviors, habits, and attitudes. Employers are responsible for assessing each workplace before work begins to identify the potential hazards present, and determine ways to eliminate the hazards. An effective housekeeping program is an important element in workplace safety and health management systems.

Uncluttered working conditions are essential to the safety of all workers and should be maintained at all times in both work and office areas. Proper housekeeping management provides for an orderly arrangement of operations, tools, equipment, storage facilities, supplies, and waste material. Good housekeeping is evidenced by floors free from grease and oil spillage; properly identified passageways; unobstructed accesses and exits; neat and orderly machinery and equipment; well-nested hoses and cords; properly stored materials; removal of excess waste material or debris from the working area; walkways free from ice and snow; surfaces, including elevated locations, free from accumulated dust; and adequate lighting. Maintaining these conditions contributes significantly to lower incident rates.

While **OSHA Regulations** require that each working surface be

cleared of debris, including solid and liquid waste, at the end of each work shift or job, whichever occurs first, to fully realize the benefit of a clean workplace, it is recommended that good housekeeping be maintained throughout the course of the job and workday.

PROVISIONS CONTAINED IN [29 CFR 1915.81](#) OUTLINE OSHA'S MINIMUM HOUSEKEEPING REQUIREMENTS TO PROTECT WORKERS. EMPLOYERS MUST:

1. Establish and maintain good housekeeping practices.
2. Eliminate slippery conditions, such as snow, ice, and grease, from walkways and working surfaces as necessary. Where removal is not possible, access to such areas must be restricted and an alternate route established, or slip-resistant footwear provided.
3. Store materials in a way that does not create hazards for workers.
4. Ensure easy and open access to all exits (including ladders, staircases, scaffolds, and gangways), fire-alarm boxes, fire extinguishing equipment and fire call stations.
5. Dispose of oils, paint thinners, solvents, rags, scraps, waste, or other flammable and combustible substances, or store them in covered fire-resistant containers, at the end of each work shift or when the job is complete, whichever occurs first.
6. Maintain walkways so that they provide adequate passage and are:
 - Free from debris, including solid and liquid waste;
 - Clear of tools, materials, equipment, and other objects; and
 - Free from trip hazards as a result of the improper storage or placement of hoses and electrical service cords. Hoses and cords must be placed above or underneath walkways or covered.
7. Cordon off any portion of a walkway that is being used as a working surface.
8. Make sure working surfaces are free from all tools, materials, and equipment not necessary to perform the job in progress. All debris, including liquid and solid waste, must

be cleared at the end of the job or work shift, whichever occurs first.

9. Keep working surfaces dry, when possible. If a wet process is used, drainage must be maintained and dry standing places made available, or workers provided with protective footgear when such means are not practicable.

STATISTICS

The Bureau of Labor Statistics (2015) revealed that out of 120 workplace deaths in the **mining, oil and gas extraction industry**, 74 of them occurred within the support activities for **oil and gas operations**.

The constant pressure of efficient productivity due to the high cost of drilling projects, time away from home, long work days, and high physical demands takes a hefty toll on workers. These factors can ultimately affect worker safety.

Workers are susceptible to motor vehicle accidents, contact injuries, slips, trips, and falls and encounter fires, explosions, chemical exposure, and confined space issues.

One study puts office accidents at 40,000 accidents a year!!! An office: One wouldn't think that an office is a dangerous place to work. Good housekeeping at work can perform magic to keep you safe from slips, trips, falls and fires.

Dust explosions, like the tragedy at the Hoeganaes Plant in Tennessee, have been linked to poor housekeeping. **More than 100 workers lives were claimed and injured more than 600 according to the U.S. Chemical Safety and Hazard Investigation Board.**

RECOMMENDATIONS

Policies to consider:

- Institute a routine cleaning schedule.
- Hold everyone in the workplace accountable for housekeeping.
- Keep walkways free of debris, cords, cables and storage items.

- Clean up oil, water and grease on floors immediately.
- Train all employees on the proper disposal of combustible and flammable materials.
- Provide nonskid strips or floor mats in slippery or wet areas and ensure they are kept in good condition (no curls or frayed edges).
- Ensure that workers wear proper footwear for their work environment.
- Encourage employees to inform you immediately of any potential safety hazards and accidents, with or without injuries. Implement corrective measures immediately.

PREVENTION

Careful consideration must be given to the volume of materials to be handled, the space needed for these materials and the methods of handling and transportation.

Piling materials

When piling materials, keep these points in mind:

- Height of pile – hazards include toppling, nearby traffic and interference with sprinkler systems.
- Strength of support – allowable floor loads should be posted.
- Continued stability – related to yard piling where uneven or moist ground may cause toppling.
- Location – aisle traffic or machinery may make it necessary to limit the height or type of materials.
- Pipe or long stock – racks aid handling, but projecting ends should be protected by railings or barriers.
- Mechanical aids – employing manual methods instead of utilizing stackers or hoists is a common fault.

Tool housekeeping

Racks and holders should be provided for all hand tools, jigs, cutters, blades and other parts. Tools frequently used at a bench or machine should be placed on racks. Wheeled racks are often very helpful.

Scrap and waste disposal

The old way of letting it fall to the floor and cleaning it up periodically is not conducive to safety. A suitable means of collecting and disposing of waste in a timely manner is recommended.

Marking storage space

Clearly marking aisles and spaces reserved for storage will solve a lot of problems in the workplace.

Leaks, drips and spillage

Use oil pans, splash guards and drip pans to keep oil off the floor. Proper means of oiling and good maintenance reduce dripping, and good construction reduces leaks.

Aisle layout

Aisles too narrow for safety are also too narrow for efficiency. Aisles accommodating powered truck traffic should be three feet wider than twice the width of the trucks used.

Machinery and equipment layout

The provision of adequate space and the proper arrangement of various production units are vital to housekeeping.

A common mistake is to add machines to well-filled floor space. This not only increases the accident hazard but often decreases efficiency because of overcrowding.

Important housekeeping tips

1. When you are finished using tools or material, return them to their proper place and clean up anything that is left sitting on work surfaces or floors.
2. If you observe materials protruding from shelving that could either fall onto workers or injure anyone walking by, push them back or if they are too large to handle or cannot be repositioned so they fit on the shelf, report them to your

supervisor.

3. Ensure that all walkways are free of obstructions such as materials, tools, or wires that could cause someone to trip or fall.
4. Never stack material to a height where it becomes unstable and might fall.
5. If emergency exit routes are blocked by material, inform your supervisor.
6. Don't leave garbage hanging around. Trash should be taken to a dumpster at the end of the shift.
7. Dispose of oily rags in covered metal containers. These containers need to be emptied on a regular basis.
8. Ensure that fire extinguishers and sprinkler systems are not blocked by equipment or materials.

“Good Housekeeping” must be practiced day-by-day.

Good Housekeeping Benefits

9. Reduce drilling costs.
10. Increase hole drilled.
11. Improve control of drilling.
12. Conserve materials and parts.
13. Decrease rig down time.
14. Use space more efficiently.
15. Open access routes and enable better movement.
16. Lower incident rates on the rig.
17. Build higher crew morale.
18. Reduce rig fire hazards

Housekeeping Practices:

- Put a tool back in the rack when you are finished using it.
- Sweep up or wash off any dirt or mud as soon as you can.
- Repair those loose steps, rickety handrails (check the base sockets and welds) and loose walkways.
- Keep cables, slings, chains, rope (catline), etc. coiled up and off the floor when not in use.
- Do not allow oil to collect on the rig floor or in the cellar.

- Do not block fire extinguishers.
- Do not block emergency exit routes.
- Keep the BOPs and cellar washed down and keep cellars jetted down.
- Keep all trash and miscellaneous parts from under sub-structure.
- Keep all excess pipe, connections etc., in a rack, not under or spread around the rig.
- Keep the water hose clean and coiled up, when not in use.
- Keep the water hose such that it cannot reach the kelly (kelly bushings).
- See that all fire extinguishing equipment is in the clear and ready for use.
- See that first aid kits and supplies are clean, filled and ready for use.
- Check all safety equipment (hard hats, shoes, goggles, gloves, gas masks, etc.) and ensure that they are clean and in good repair.

Safety Check List

Slips / Falls:

Slips can be caused by spilled liquids or improper maintenance. Are the floors clean and free of ice, mud, water or coffee spills? Do you wipe up small messes immediately and report larger ones to the maintenance department?

Trash:

Trash can also be a source of slips and falls as well as fires. Do you place all of your trash in your waste-paper basket or recycling container?

Fire hazards:

Speaking of fire hazards, if you smoke do so only in the assigned areas. Do you use a

designated covered metal can for emptying ashtrays? This is one type of trash which should never be placed in a waste-paper

basket.

Electric cords:

Abused electrical cords can be another source of fire. Are the electrical cords for your printers, computers, monitors, fax machines and photocopiers in good condition? Inspect yours regularly and report any cords which appear to be worn, broken or lacking pieces of insulation.

While you are looking at the condition of your electrical cords, consider whether they are a tripping hazard as well. Are they routed away from traffic areas? Perhaps you may have to consider changing the office equipment layout to prevent people from walking on or over the electrical cords.

Tripping Hazards:

Do you keep your work and traffic areas free of tripping hazards for co-workers? Old files, such as the month and year-end reports, should be stored in proper boxes and moved to a central storage area.

Other tripping hazards are loose, worn or frayed carpets and unsecure small rugs or mats. Do you regularly report any problems to your supervisor or the maintenance staff?

Office furniture:

Is the office furniture kept in good repair to maintain safety? Defective furniture such as chairs should be removed from service immediately.

Flammable materials:

Flammable liquids such as solvents and art supplies should be stored in approved containers which are kept closed. They should be kept in areas with adequate ventilation and away from any possible sources of ignition.

Combustible materials:

Do you keep combustible substances, such as paper and cardboard, away from heat sources such as electrical heaters? Paper being saved for recycling should be picked up regularly so that it does not accumulate and present a fire hazard.

Exits:

Make sure that fire exits remain clear. Never place furniture or supplies in front of a fire exit – even just temporarily.

Fire doors:

Fire doors, which are designed to slow the spread of fire, should be kept closed as directed. Never prop open a fire door just to facilitate traffic or to let in a breeze.

The possibilities for injury or death in a cluttered workplace are many. Workers can slip on spilled material that hasn't been cleaned up, trip over debris on a floor, hurt themselves while walking past heavy or sharp objects that are protruding from shelves or be struck by unsecured items that shift and fall from racking.

If sawdust, sugar or other material is left to accumulate on surfaces and it comes in contact with an ignition source, it can cause a deadly explosion and fire.

It is neither safe nor practical for you to sweep dust off a beam high in the air in your workplace. If you are concerned about a buildup of combustible dust and the potential for an explosion, talk to your supervisor.

As a worker, there's plenty you can do on the ground to keep yourself and your co-workers safe. While it can be annoying to see someone create a mess such as a spill and walk away from it, ignoring that mess yourself is wrong because it puts everyone in danger.

The few seconds it takes to mop up a coffee spill on the floor or sweep up some wood chips and sawdust can make a huge difference to the safety of your workplace. But if you don't know what the

spilled material is, talk to your supervisor before attempting to clean it up.

Worker Dies During Hot Work Welding

INCIDENT

In November 2011, two contractors at the E. I. DuPont De Nemours Co. located in Buffalo, New York, were performing welding atop a 10,000-gallon slurry tank when hot sparks ignited flammable vapors, causing an explosion that killed one contractor and seriously injured another. The CSB's final report and safety video, entitled "Hot Work: Hidden Hazards," were released at an April 19, 2012, public meeting. A primary cause of the blast was established by the CSB as the failure of the company to require that the interior of storage tanks—on which hot work was to be performed—be monitored for flammable vapor. The CSB issued a recommendation urging DuPont to require monitoring inside and around storage tanks prior to performing any hot work.

NEED TO KNOW

Hazards / Dangers

Hot work produces electrical arcs or flames that can reach up to 10,000. High temperatures, sparks and slag, are also an ever-present danger. Hot work equipment, such as arc welding circuits, can cause serious or fatal electrocution. **Arc welding** produces [intense UV light](#) that can damage welders' retinas.

Health Dangers:

These components in welding smoke can affect the welder's lungs,

heart, kidneys and central nervous system. [Long-term exposure](#) to welding smoke can cause chronic respiratory problems, decreased lung capacity, heart disease, skin disease, hearing loss, kidney damage, reproductive harm, and other diseases.

As defined by NFPA 51B, hot work is any work that involves “burning, welding, or a similar operation that is capable of initiating fires or explosions.” It’s not just work that involves flames. After all, you don’t need a flame to generate heat. Activities such as drilling, soldering, brazing, tapping, grinding, heat treating, chipping, thawing pipes, and abrasive blasting—often referred to as sand blasting—are all considered hot work.

According to the NFPA report on hot work structure fires, soldering causes 34 percent of hot work fires started in homes. Because this work must usually be performed close to combustible construction materials and insulation, it can be a significant hot work safety challenge.

NFPA 51B and other hot work safety practices require someone—normally a trained fire watch—to remain at the work site for a minimum of 30 minutes after hot work has stopped to monitor the site for any smoldering conditions or reignition from hot embers or retained heat. And heat has a way of sticking around. Insurance data indicates that retained heat has contributed to reignition conditions up to four hours after the hot work was performed.

NFPA 51B requires establishing a hot work safety team consisting of three individuals: the person in charge (referred to in NFPA 51B as the permit authorizing individual, or PAI); a hot work operator; and a fire watch. The standard defines their duties as being responsible for safety on the work site and identifying any change in conditions so that hot work stops until the conditions are reevaluated. The message on the job site for all workers is if they see something that might be an unsafe change in condition, they need to tell someone so it can be checked.

Many types of hot work, such as welding, grinding, and torch

cutting, produce sparks, slag, or spatter that can reach well beyond the immediate work area. For that reason, NFPA 51B establishes a minimum safe distance of 35 feet in all directions from the location of the hot work. In other words, combustible materials must be moved at least 35 feet away from the work to prevent contact with the hot work residue, such as sparks or slag. That distance is only a minimum, and conditions such as wind or proximity to dry grass might necessitate a greater distance. While working at an elevated location, for instance, where sparks can fall vertically.

BUSINESS / REGULATIONS

In February 2010, the U.S Chemical Safety and Hazard Investigation Board (CSB) released [“Seven Key Lessons to Prevent Worker Deaths during Hot Work in and Around Tanks,”](#) a safety bulletin that provided summaries and findings from 11 investigations. (It also notes that 60 fatalities occurred due to hot work between 1990 and 2010.) In addition, the bulletin provided seven key lessons aimed at preventing worker deaths during hot work in and around storage tanks containing flammable materials. These include:

1. **Use Alternatives:**Whenever possible, avoid hot work and consider alternative methods.
2. **Analyze the Hazards:**Prior to the initiation of hot work, perform a hazard assessment that identifies the scope of the work, potential hazards, and methods of hazard control.
3. **Monitor the Atmosphere:**Conduct effective gas monitoring in the work area using a properly calibrated combustible gas detector prior to and during hot work activities, even in areas where a flammable atmosphere is not anticipated.
4. **Test the Area:**In work areas where flammable liquids and gases are stored or handled, drain and/or purge all equipment and piping before hot work is conducted. When welding on or in the vicinity of storage tanks and other containers, properly test and, if necessary, continuously monitor all surrounding tanks or adjacent spaces—not just the tank or container being worked on—for the presence of flammables and eliminate potential sources of flammables.

5. **Use Written Permits:** Ensure that qualified personnel familiar with the specific site hazards review and authorize all hot work and issue permits specifically identifying the work to be conducted and the required precautions.
6. **Train Thoroughly:** Train personnel on hot work policies/procedures, proper use and calibration of combustible gas detectors, safety equipment, and job-specific hazards and controls in a language understood by the workforce.
7. **Supervise Contractors:** Provide safety supervision for outside contractors conducting hot work. Inform contractors about site-specific hazards, including the presence of flammable materials.

Due to the frequency and severity of hot work accidents, the CSB has designated safe hot work practices as one of the five elements of its newly developed Drivers of Critical Chemical Safety Change Program. The CSB's Drivers of Critical Chemical Safety Change are based on recommendations resulting from CSB investigations and studies. The goal of the program is to pursue implementation of changes most likely to achieve important national-level safety improvements.

The CSB has continued to advocate for best practices and recommended improvements of consensus standards, specifications, recommended practices, technical reports, and codes to address hot work activities. NFPA standards and codes referenced by the CSB in its hot work investigations include [NFPA 51B, Fire Prevention During Welding, Cutting, and Other Hot Work](#); [NFPA 326, Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair](#); and [NFPA 70E®, Electrical Safety in the Workplace®](#). In addition, the CSB has continued to push for the adoption of its recommendations aimed at preventing hot work incidents by emphasizing the need for increased hot work hazard awareness among workers and the need for stronger oversight and responsibility for hot work activities.

STATISTICS

Industrial Safety & Hygiene News, using figures from OSHA studies,

reports that 1 in 250 construction workers will die from a welding injury. With over half a million American welders working today, we can conservatively expect 2,000 welding fatalities in our lifetime. That's not even mentioning the many more permanent injuries that welders will incur.

- From 2001-2018, five firefighters were fatally injured in four unintentional fires started by torches.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) has found that hot work is one of the most common causes of worker deaths among incidents investigated by the agency. The CSB continues to see hot work incidents and has found a significant subset of occurrences—those involving piping, tanks, or containers where flammables are present—to be particularly dangerous. In addition, the CSB repeatedly observes hot work incidents involving tanks or containers at high-hazard facilities such as refineries and chemical plants that typically result in injuries and fatalities and have the potential to result in major catastrophic accidents.

Since 2001, the CSB has deployed to and investigated 14 hot work-related incidents that have resulted in 25 fatalities and 21 injuries to employees and members of the public. The CSB continues to monitor hot work incidents where continuous monitoring could have alerted workers to the changing conditions in areas where hot work activity was conducted.

Between 2010 and 2013, the CSB reviewed 187 hot work incidents, 85 of which resulted in a fire or explosion while hot work was being conducted on or near a tank or container. These incidents resulted in 48 fatalities and 104 significant injuries. Twenty-three percent of injuries and 42 percent of fatalities involved contractor workers.

The CSB continues to see catastrophic incidents involving hot work on tanks and containers containing flammable vapors. Our past investigations into these incidents demonstrate a lack of awareness of the hazards of conducting hot work on containers that in some cases had previously been cleaned. The CSB recently

deployed to two hot work incidents, one at the Sunoco Logistics LP terminal in Nederland, Texas, and the other at the PCA facility in DeRidder, Louisiana. At Sunoco, seven contractors were injured in a flash fire while conducting hot work on a pipeline on August 12, 2016. On February 8, 2017, three contractors were fatally injured in an explosion at the PCA facility while conducting hot work.

According to the NFPA report "[Structure Fires Started by Hot Work](#)," issued last September, fire departments in the United States responded to an average of 4,400 structure fires a year involving hot work from 2010 to 2014.

There are other revealing statistics.

According to estimates from the Consumer Product Safety Commission (CPSC's) National Electronic Injury Surveillance System (NEISS), and estimated 11,500 people visited hospital emergency departments because of injuries associated with welding soldering, and cutting tools considered consumer products in 2018.

Note that in many cases, no fire occurred.

- Radiation burns to the eyeball caused 4,300 (58%) of these injuries.
- 2,300 (20%) of the injuries involved foreign bodies in the eyes.

The following examples from the **NEISS narratives show the importance of wearing eye protection**

- A 25-year-old man who was welding without eye protection suffered radiation burns to his eyes.
- A 35-year-old female was assisting someone who was welding and later woke with "burning, itching, eye pain, and photophobia". She was diagnosed with welder's keratitis.
- Welding debris caused a corneal abrasion in a 69-year-old man.
- A 32-year-old man went to the ED after suffering flash burns while welding the night before.
- A 43-year-old man burned his eyes while welding without wearing eye protection.

- A 55-year-old man had a piece of metal in his eye. He believed that this occurred while soldering the night before.
- Foreign material fell into the eye of a 51-year-old man who was welding under a car.

CPSC estimates that another 1,800 (16%) of the injuries associated with welding, soldering, and cutting tools were thermal burns. Some of these were due to contact with hot metal or a blow torch; others involved actual fires.

- A 25-year-old man was welding at home when sparks ignited his jacket causing second-degree burns to his forearm.
- A 76-year-old man was welding when a spark ignited his pants causing burns to his lower leg.
- A 49-year-old man burned his hand on hot metal while welding.
- An 18-year-old man picked up a piece of bare metal while welding barehanded.

PREVENTION

Staying safe is encapsulated in the 4 following procedures.

1. Hot work management program.
2. Substitutes / Alternatives.
3. Good Practices Checklist.
4. Personal Protective Equipment.

These four aspects incorporate the basis of preventative and precautionary steps to protect workers from harm in this dangerous hot work undertakings.

1. Hot Work Management Program

Hot work programs are designed to control or eliminate hot work hazards and their risks including policies, procedures, and the assignment of responsibilities for all aspects of hot work.

1. Policies

2. Where hot work is permitted.
3. When hot work is permitted.

4. Who authorizes, performs, and monitors hot work activities.
5. **Procedures**
6. What must be assessed before permitting/performing hot work in an area or on a process piece of equipment or area.
7. What to do to prepare an area for hot work.
8. What to do if hot work cannot be avoided in a particularly hazardous area.
9. What hot work tools are required?
10. How to obtain a hot work permit, when they are required, and who can administer them.

3. **Training**

4. Employees, supervisors, maintenance individuals, fire wardens, trained fire watch individuals, and contractors all have different roles, and must be trained accordingly.

5. **Communications**

6. Posting procedures.
7. Posting policies.
8. Posting signs in areas that are prohibited from having hot work performed in them.

9. **Substitutes / Alternatives**

Assess the substitutes or alternate method for any risks or hazards. Do not introduce any new risks or hazards.

1. **Good Practices Checklist**

- Make sure that all equipment is in good operating order before work starts.
- Make sure that all appropriate [personal protective devices](#) are available at the site and each worker has been trained on how to use, clean, and store them properly.
- Inspect the work area thoroughly before starting. Look for combustible materials in structures (partitions, walls, ceilings).
- Move all flammable and combustible materials away from the work area.
- If combustibles cannot be moved, cover them with fire resistant blankets or shields. Protect gas lines and equipment from falling sparks, hot materials, and objects.

- Sweep clean any combustible materials on floors around the work zone. Combustible floors must be kept wet with water or covered with fire resistant blankets or damp sand.
- Use water ONLY if electrical circuits have been de-energized to prevent electrical shock.
- Remove any spilled grease, oil, or other combustible liquid.
- Vacuum away combustible debris from inside ventilation or other service duct openings to prevent ignition. Seal any cracks in ducts. Prevent sparks from entering into the duct work. Cover duct openings with a fire-resistant barrier and inspect the ducts after work has concluded.
- Make sure that appropriate fire extinguishers (e.g., ABC fire extinguishers) are available and easily accessible.
- Make sure that the first-aid boxes are available and easily accessible.
- Block off cracks between floorboards, along baseboards and walls, and under door openings, with a fire-resistant material. Close doors and windows.
- Cover wall or ceiling surfaces with a fire resistant and heat insulating material to prevent ignition and accumulation of heat.
- Secure, isolate, and vent pressurized vessels, piping and equipment as needed before beginning hot work.
- Inspect the area following work to ensure that wall surfaces, studs, wires or dirt have not heated up.
- Post a trained fire watcher within the work area, including lower levels if sparks or slag may fall during welding, including during breaks, and for at least 60 minutes after work has stopped. Depending on the work done, the area may need to be monitored for longer (up to 3 or more hours) after the end of the hot work until fire hazards no longer exist.
- Eliminate explosive atmospheres (e.g., vapors or combustible dust) or do not allow hot work. Shut down any process that produces combustible atmospheres, and continuously monitor the area for accumulation of combustible gases before, during, and after hot work.
- If possible, schedule hot work during shutdown periods.

- Comply with the required legislation and standards applicable to your workplace.

1. Personal Protective Equipment

Eye and face protection, such as goggles and face shield or helmets, helps protect workers from hot sparks and molten particles. Other common PPE for hot work includes insulated gauntlet gloves, hard-toed high-top shoes, leather aprons, insulated coveralls, safety glasses, helmets and hard hats, and leggings or high boots. Workers should always keep their clothes fully buttoned and uncuffed when performing hot work and wear wool or insulated fabrics. When welding overhead objects, workers will need extra protection, like heat-resistant shoulder covers, aprons, head covers, leggings, and suits. You must provide most types of [PPE](#) to your employees and train them on how to properly use, maintain, and dispose of it.

Hot work is dangerous and even deadly, but with proper training and protective measures, your facility can reduce welding-related injuries and illnesses. Follow all precautions for hot work and remove or cover flammable and combustible materials before your employees begin. Ensure that all employees are provided with PPE and use it correctly.

1 to 2 Million Workers in the US are Still Exposed to Silica

INCIDENT

The worst case of acute silicosis occurred in the 1930s during the construction of the Gauley Bridge hydroelectric tunnel at Hawk's Nest, W.Va.

Approximately 2,000 workers were digging a tunnel through high-

silica rock with no respiratory protection, even though the health effects of silica exposure had been documented for decades. As many as 1,500 men died as a result of inhaling silica dust.

Silicosis is caused by breathing small particles of crystalline silica. Once the particles are inside the lungs, they become trapped and cause areas of swelling around them. Over time, these swollen areas grow larger, breathing becomes increasingly difficult, and lung failure may cause death. In addition, silica exposure is also being connected to diseases besides silicosis, including cancer, tuberculosis, immunological disorders and kidney ailments.

Occupational exposure to silica particles of respirable size occurs in a variety of occupations, including mining, quarrying, drilling and sand blasting activities. Because silica sand is an inexpensive and versatile component of many manufacturing and construction processes, millions of workers throughout the world are at risk for the disease.

There are three types of silicosis:

- Chronic silicosis, the most common form of the disease, usually develops after 10 or more years of exposure to relatively low dust concentrations.
- Accelerated silicosis results from exposure to high concentrations of silica over a 5- to 10-year period.
- Acute silicosis is a rare but highly fatal disease that is caused by brief but massive exposure to dust with high quartz content.

The unchecked use of silica in industry continued. In March and April of 2014 at OSHA hearings, Hispanic and immigrant workers testified to their experience working with silica.

Jonas Mendoza a construction worker from New Jersey said that proper equipment and training is not available in many construction jobs. In the construction industry contractors do not provide the workers with the basics to do the job. "If you ask for protective equipment, they give you a mask from the 99-cent store

to shut you up.”

Santos Edilberto Alemendarez who came to the United States from Honduras in 2007. He described his experience manufacturing cabinets out of wood and granite at a small factory in Texas.

“The process of cutting the granite was dry and this produced an excessive amount of dust generated by cutting a processing the granite. The dust filled the entire environment in the place. The company did not provide adequate protection for the workers and they did not provide dust masks to protect their employees. During the time I was at Craft Master I was inhaling granite dust most of the time. Regularly I wore a dust mask but this was not adequate to protect himself from such dust.”

“We are exposed to the poison,” said **José Granado**, a construction worker from Houston who came to the United States from El Salvador 15 year ago.

“I came to U.S. looking for a better life. However due to risky and unsafe work that I’m doing in the construction industry, it looks like instead of getting a better life, I came to give mine away.”

NEED TO KNOW

Silicosis is one of the oldest recognized occupational diseases. Experts say they really do not know how many people are suffering and dying from it today. It may be that the principal reason silica remains such a deadly hazard in U.S. workplaces is because too many people think it’s no longer a serious problem.

BUSINESS / REGULATIONS

There is linkage between regulation to address silica hazards and “bad data”. Bad data stems from the silicosis which is so often misdiagnosed or not recognized. This bad data, in turn complicates the government’s effort to address the silica hazards through effective regulations.

Silica litigation is not yet rising at the rate of asbestos, but

is increasing because lots of plaintiff's attorneys are searching around for the "next asbestos."

" Federal legislation that would put an end to asbestos litigation remains a possibility, and many states already have passed laws that limit such lawsuits. Silica is a logical hazard for lawyers to pursue. Moreover, there is now a "litigation infrastructure" of physicians and expert witnesses in place and ready to testify on both hazards.

Many lawsuits now include both silica and asbestos, which complicates the effort to compare the two hazards, while confirming the link between them.

Still, in terms of the numbers of lawsuits and plaintiffs, silica has a long way to go to reach the level of asbestos, but silica claims are growing.

OSHA have been lobbying for almost 40 years to implement exposure levels to ensure safety levels or permissible exposure limit (PEL) for workers exposed to silica dust.

But in 2015, OSHA established a new rule to protect America's workers. The rule established a new permissible exposure limit PEL that apply to the construction industry.

KEY PROVISIONS of OSHA's new crystalline silica rule:

- Reduce the permissible exposure limit (PEL)
- Requires employers to use engineering and work practice controls to reduce worker exposure to silica dust (e.g., water to wet down the dust, or HEPA-filtered vacuums and local exhaust ventilation and dust collection systems to capture and remove dust), provide respirators when engineering and work practice controls cannot adequately limit exposure, limit worker access to high exposure areas, provide training, develop a written exposure control plan, measure exposures, and offer medical exams to highly exposed workers.

In a perfect world, effective regulation would greatly mitigate

the deleterious effects of silicosis in the workplace. The best possible scenario is the coupling of effective regulation and not to use silica at all by substituting silica with other cost-effective measures.

Apart from that tragic loss of life in building the Gauley Bridge in West Virginia in the 1930's who are the workers most affected by the silica dust?

They are Hispanic Central American and temporary workers. This genre of people who have few options, take dirty, dangerous jobs that lack proper safety protection or regulation.

STATISTICS

"Over the past several decades, silicosis mortality has declined, from well over 1,000 deaths annually in the late 1960s to fewer than 200 per year in the late 1990s."

The annual number of silicosis does not begin to tell the whole story of how many people suffer from the disease.

First, not all cases of silicosis are fatal.

Second, even in death, the disease is often undiagnosed.

Experts point out to research that shows silicosis deaths represent 4 to 8 percent of the silicosis cases per year. Estimates based on deaths alone miss more than 90 percent of the silicosis cases in the country. By that calculation, some 2,500 to 5,000 silicosis cases could be occurring each year.

A NIOSH study reveals that although the number of silicosis deaths has declined in the past decade, the occupational lung disease still kills about 100 people every year.

From 1999 to 2013, silicosis was the underlying or contributing cause of death for 2,065 people. The number of deaths in 1999 was 185, but fell to 88 by 2011. In 2012 and 2013, 103 and 111 people died due to silicosis, respectively.

Caused by inhaling particles containing crystalline silica,

silicosis takes at least 10 years to develop after the first exposure, and death typically does not occur until several years later. Because about 4 percent of silicosis deaths in recent years were among adults younger than 44. Younger workers may have a higher level of exposure to silica.

PREVENTION

Silicosis cannot be cured, but experts say it can be prevented.

Experts say that silicosis should not occur. It's the result of ignorance. Effective strategies for protecting workers from silica dust will depend upon the specifics of the worksite.

This theme has been echoed by NIOSH who called the disease "an occupational obscenity because there is not scientific excuse for its persistence."

The symptoms of silicosis include shortness of breath, cough and difficulty in breathing with physical exertion, according to the National Institute for Occupational Safety and Health (NIOSH). Because of the common nature of these symptoms, the disease is frequently misdiagnosed or proceeds undetected. The disease is diagnosed on the basis of its symptoms in conjunction with work history and X-ray assessments of dust-induced lung damage.

The following are the procedures which are designed to prevent silicosis in the workplace:

- Hazard Recognition is the first step in protecting workers, one that is often missed, according to silicosis experts. NIOSH recommends assessing the potential for worker exposure to crystalline silica before rock drilling or other possible exposures begin. "Keep your eyes open for any operation that produces fine dust," advises Tee Guidotti, MD, Ph.D., an occupational physician in the School of Medicine at George Washington University.
- Use Engineering Controls to reduce silica exposures, or find safer alternatives.
- Conduct Air Sampling to measure worker exposures.
- Regular Medical Examinations must be provided to any worker

exposed to silica.

- Educate Workers about health effects, work practices and personal protective equipment for silica.
- Wear Washable Protective Clothes or clothes that can be disposed of at the worksite. Shower and change into clean clothes before leaving the worksite to prevent the contamination of cars, homes and other work areas.
- Use Respiratory Protection as a last line of defense if silica exposures cannot be kept below NIOSH's recommended exposure limit of 0.05 mg/m³. Consult OSHA's Respiratory Code.
- Store silica if it is found in large quantities.
- Don't smoke as exposure to both cigarettes and silica dust result in more severe lung disease than silica alone.
- Isolate work processes that produce silica dust.
- Wash hands and face before eating, drinking or smoking following exposure.

An ounce of prevention will deliver you more than a pound of cure if proactive prevention programs and measures are taken in the workplace.

Mine Safety

PREAMBLE

Mine safety is a broad term referring to the practice of controlling and managing a wide range of hazards associated with the life cycle of mining-related activities. Mine safety practice involves the implementation of recognized hazard controls and/or reduction of risks associated with mining activities to legally, socially and morally acceptable levels. While the fundamental principle of mine safety is to remove health and safety risks to mine workers, mining safety practice may also focus on the reduction of risks to plant (machinery) together with the

structure and orebody of the mine.

INCIDENT

Coal Miner Dies in 4th Mining Fatality of 2018

More Mining Deaths Prompt Calls for Safety Stand-Downs

In 2006, the deaths of two more West Virginia coal miners yesterday which brought the state's mining death toll which 16 prompted Gov. Joe Manchin to call for a statewide mine safety stand-down.

"This means that starting with the current shift, and each new shift after that, the mine companies, supervisors and the miners themselves are to engage in a thorough review of safety procedures before any work is to continue," Manchin said. He added that the Mine Safety and Health Administration has agreed to send additional inspectors to West Virginia to respond to what MSHA Administrator David Dye called "the unusually high number of mine fatalities" in the state this year.

Dye asked coal mines across the country to conduct a stand-down for safety on Feb. 6. While 2005 was the safest year for mining on record, **so far this year 16 in West Virginia, two in Kentucky and one miner from Utah have died for a total of 19.**

"I am asking miners and management at every mine operation to do the right thing: Take 1 hour out for safety's sake this Monday and stand down for safety, to be proactive in preventing future accidents and saving lives," Dye said. "This Monday, we urge that extra time be taken, at the beginning of each shift and before the start of any mining activity, to go over the hazards involved with mining and the vital safeguards that need to be taken."

MSHA said it will send packets of safety information to stakeholders for discussion at coal mines as well as post information regarding the safety stand-down on its [Web site](#).

Manchin said that there were incidents at three separate coal mines yesterday at two underground mines and one surface mine. The two fatalities occurred at Elk Run Coal Co.'s Black Castle Mine and Long Branch Energy's No. 18 Tunnel Mine, according to MSHA.

In response to yesterday's mining fatalities, United Mine Workers of America President Cecil Roberts urged union coal mines in West Virginia "to undertake a meticulous inspection of their mines." Roberts said the Long Branch Energy mine is represented by UMWA.

If operators of union mines fail to cooperate with inspections, Roberts added, "the union will consider taking further action under the authority of the union's collective bargaining agreements with the operators."

"We support Gov. Manchin's call for a stand-down of mines in West Virginia until there is a thorough review of safety procedures," Roberts said. "At non-union mines, that means the governor will have to rely on the word of the operator that the mine has carried out his directive. The UMWA will be taking that a step further at union mines with the order for a full safety inspection."

Today, in 2020 Gov Joe Manchin is still in office in West Virginia as a strong advance of the Coal industry. But fatalities in coal mining operations still occur across the USA and elsewhere in the world.

BUSINESS / REGULATORY

The Mine Safety and Health Act of 1977, MSHA is required to inspect underground coal mines in their entirety at least four times per year to safeguard miners. However, a **lack of resources** during a period of increasing mining activity, as well as agency officials not placing "adequate resources on ensuring the inspections completed," contributed to the agency's failure to complete the required inspections.

According to a report released by the Labor Department's Office of the Inspector General (OIG), MSHA failed to conduct the required inspections at 107 of the nation's 731 underground coal mines in 2006.

The obvious conclusion to draw is that if more resources (money) was allocated for safety inspections in America's underground real mines, more of the dead miners may still be alive. There were 19 deaths in the coal sector 2005.

This part 50 implements sections 103(e) and 111 of the Federal Coal Mine Health and Safety Act of 1969, 30 U.S.C. 801 et seq., and sections 4 and 13 of the Federal Metal and Nonmetallic Mine Safety Act, 30 U.S.C. 721 et seq., and applies to operators of coal, metal, and nonmetallic mines.

- It requires operators to immediately notify the Mine Safety and Health Administration (MSHA) of accidents, requires operators to investigate accidents, and restricts disturbance of accident related areas.
- This part also requires operators to file reports pertaining to accidents, occupational injuries and occupational illnesses, as well as employment and coal production data, with MSHA, and requires operators to maintain copies of reports at relevant mine offices.
- The purpose of this part is to implement MSHA's authority to investigate, and to obtain and utilize information pertaining to, accidents, injuries, and illnesses occurring or originating in mines.
- In utilizing information received under part 50, MSHA will develop rates of injury occurrence (incident rates or IR), on the basis of 200,000 hours of employee exposure (equivalent to 100 employees working 2,000 hours per year).

The incidence rate for a particular injury category will be based on the formula:

IR = (number of cases x 200,000) divided by hours of employee's exposure.

MSHA will develop data respecting injury severity using days away from work or days of restricted work activity and the 200,000-hour base as criteria. The severity measure (SM) for a particular injury

SM = (sum of days x 200,00) divided by hours of employee exposure.
Immediate

Immediate notification.

The operator shall immediately contact MSHA at once without delay and within 15 minutes at the toll-free number, 1-800-746-1553, once the operator knows or should know that an accident has occurred involving:

- (a) A death of an individual at the mine;
- (b) An injury of an individual at the mine which has a reasonable potential to cause death;
- (c) An entrapment of an individual at the mine which has a reasonable potential to cause death; or
- (d) Any other accident.

Investigation.

(a) After notification of an accident by an operator, the MSHA District Manager will promptly decide whether to conduct an accident investigation and will promptly inform the operator of his decision. If MSHA decides to investigate an accident, it will initiate the investigation within 24 hours of notification.

(b) Each operator of a mine shall investigate each accident and each occupational injury at the mine. Each operator of a mine shall develop a report of each investigation. No operator may use Form 7000-1 as a report, except that an operator of a mine at which fewer than twenty miners are employed may, with respect to that mine, use Form 7000-1 as an investigation report respecting an occupational injury not related to an accident. No operator may use an investigation or an investigation report conducted or prepared by MSHA to comply with this paragraph. An operator shall submit a copy of any investigation report to MSHA at its request.

Each report prepared by the operator shall include:

- (1) The date and hour of occurrence;

- (2) The date the investigation began;
- (3) The names of individuals participating in the investigation;
- (4) A description of the site;
- (5) An explanation of the accident or injury, including a description of any equipment involved and relevant events before and after the occurrence, and any explanation of the cause of any injury, the cause of any accident or cause of any other event which caused an injury;
- (6) The name, occupation, and experience of any miner involved;
- (7) A sketch, where pertinent, including dimensions depicting the occurrence;
- (8) A description of steps taken to prevent a similar occurrence in the future; and
- (9) Identification of any report submitted under §50.20 of this part

STATISTICS

Coal mining is one of the most dangerous job in America. Explosions in coal mining have killed thousands of workers. Even though safety regulations and technology have improved to reduce injuries and fatalities, accidents still occur.

2008 – 2018

- Over 400 people died in this period.

2018

- Fatalities fell marginally from 15 to 12

2017

- 27 people died in mining facilities in 2017
- There were 4,035 non-fatal injuries in mining facilities in 2017

- There are 1,216 currently active coal mines

2016

- 25 U.S. miners died at work.

2012

- There were 1,871 coal mines and 137,650 miners.
- In 2012, 20 people died in work-related accidents in coal mines.
- There were 3,459 injuries reported in 2012.
- Of the reported injuries, 2,331 resulted in days off work.
- The Mine Safety and Health Administration issued 139,770 citations to coal mine operators.

2011

- There were 1,973 coal mines and 143,437 miners.
- In 2011, 21 fatalities occurred in coal mines.
- There were 3,923 total injuries reported, an increase compared to 2010.
- Of the total injuries, 2,601 resulted in lost work days.
- The Mine Safety and Health Administration issued 156,802 citations to coal mine operators.

2010

- In 2010, there were 1,944 coal mines and 135,500 miners.
- Of those miners, 48 died due to fatal workplace injuries.
- There were 3,766 total injuries reported in 2010.
- Of the total injuries, 2,532 resulted in lost work days.

PREVENTION

The mining industry can be risky business, with health serious risks. It is important for miners to be protected.

The introduction of strict safety legislation, as well as advances in safety equipment, the industry has seen its fatality rate drop over time.

The following steps will advance the safety of miners

1. Coal dust

- Dust inhalation or coal dust is one of the most common concerns for miners.
- The ongoing inhalation of coal dust can cause what is known as 'miner's lung' or 'black lung'. Miner's lung is a form of the occupational lung disease group pneumoconiosis. Symptoms include shortness of breath and scarring of lung tissue, which causes ongoing respiratory issues.
- Black lung has been legally enforced for many years now but new cases still occur among coal miners.
- Mining companies need to develop a dust control plan, and supervisors must ensure that dust control systems are working properly for every production shift.
- Mine workers must be trained on the hazards of over-exposure to coal mine dust.
- Respiratory protection should be used when dust control protection is being installed, maintained or repaired.

2. Noise

- The potential for hearing damage is serious with the constant drilling and heavy machinery.
- Many people don't notice the damage to their hearing until long after they were first exposed to the noisy environment, as most damage occurs very slowly.
- "Over-exposure to excessive noise can result in tinnitus (ringing in the ears), sleep disturbances, concentration problems and even permanent hearing loss.
- Mining companies need to evaluate working conditions and noise exposure through risk assessments.
- Avoiding and reducing exposure can be achieved by applying engineering controls at the noise source or along the noise path to reduce exposures.
- Regular maintenance of machines is essential to reducing noise.
- Employer must ensure proper use of personal hearing protection amongst noise-exposed employees.

- Provide necessary health and safety training and maintain up-to-date health surveillance records.

3. Whole body vibration

- Whole body vibration (WBV) is a slow forming physical hazard that occurs to mining workers.
- WBV can be caused either by spending a lot of time sitting on machinery, which is most of the time in mining extraction, or by standing, such as working on jumbo operators.
- Some forms of vibration are ok, but become dangerous when they involve uneven surfaces, vehicle activity such as ripping versus pushing material in a bulldozer, and engine vibrations.
- Symptoms of WBV include musculoskeletal disorders, reproductive damage in females, vision impairment, digestive problems and cardiovascular changes.
- Reducing exposure does reduce health risks and the first step that mining should companies take. This includes filling in potholes on unmade roads, minimizing the transport of goods or materials, or replacing manned with unmanned machines such as remotely controlled conveyors.
- Where risks cannot be avoided, supervisors need to reduce the time employees use the machine each day.
- Instruction and training are critical.
- Symptoms of back pain in employees must be closely monitored.

4. UV Exposure

- There is risk of over-exposure to UV (ultraviolet) radiation in sunlight for pit-miners.
- Over exposure of ultraviolet rays can put you at risk of skin cancer. UV rays cause melanomas to form, but they can cause serious damage to your eyes if you are not wearing protective eye wear.
- Overexposure to the sun can cause dehydration, headaches and

nausea.

- Mine workers often spend whole days out in the baking hot sun, and are at a very high risk of developing cancer and eye problems.
- Employers should conduct a risk assessment on outdoor work scheduled to assist in developing appropriate sun protection measures.
- The effective way to reducing UV exposure is to use a combination of re-organizing work to avoid the UV peak of the day.
- Provide natural or artificial shade.
- Provide appropriate protective clothing, and applying sunscreen.
- Employers must train employees to raise awareness of the risks associated with exposure to UV and the sun protection measures required.
- Employers can provide skin cancer checks as part of regular workplace medical examinations and in pre-employment medical checks.

5. Musculoskeletal disorders

- Musculoskeletal disorders (MSDs) refer to any problems affecting your bones, muscles, blood vessels and nerves.
- Musculoskeletal damage can occur due to a trip, fall or heavy lift, the more serious ones occur slowly over time due to ongoing heavy lifting or repetitive strains.
- Employers should identify and assess job-related MSDs hazards and put in place controls to reduce workers' exposure to MSDs hazards.
- Workers need be advised and trained about MSDs hazards in their job and workplace and encouraged to participate in health and safety programs.
- Employers need to follow up to ensure preventative measures are working.

6. Thermal stress

- A common health risk that miners face is thermal – or heat – stress.
- Overexposure to heat and humidity causes the body to become fatigued and distressed which results in heat stroke or more serious ongoing health problems.
- Where there is a possibility of heat stress occurring, companies must carry out a risk assessment that considers the work rate, working climate, worker clothing and respiratory protective equipment.
- Control the temperature using engineering solutions, provide mechanical aids where possible to reduce the work rate, and regulate the length of exposure to hot environments.
- Personal protective equipment must be provided, such as specialized protective clothing that incorporates personal cooling systems or breathable fabrics.
- Companies must provide training for workers, especially new and young employees, and monitor the health of workers at risk.

7. Chemical hazards

- Mine workers are often exposed to harmful chemicals.
- The most common group of chemicals that cause concern in a coal mining environment are polymeric chemicals.
- Regardless of the chemicals you work in close proximity, appropriate safety wear and precautions need to be taken to minimize your body's exposure to them. Risks include chemical burns, respiratory problems and poisoning.
- Each chemical has a unique set of hazards and needs to be handled properly to ensure worker safety and employers according need to conduct risk assessments to establish best practices.
- A standard operating procedure (SOP) that addresses the use of correct personal protective equipment, safe handling, safe use, and proper disposal must be established.
- Thorough training and drills should be conducted regarding

the company's spill response plans and chemical hygiene plans.

- Ventilation, general housekeeping and cleanliness are important factor to minimize exposure.
-

Indoor Air Quality Fatality File

INCIDENT

In a far-reaching human rights case, Ella Kissi-Debrah could become the first person to have toxic air given as their cause of death – and finally make this silent killer visible

From a tiny office on the top floor of the old town hall in Catford, south-east London, Rosamund Kissi-Debrah is leading a campaign to push air pollution on to the political agenda as never before. It has been claimed for years that pollution caused by motor vehicles, especially diesel cars, buses and lorries, is a killer, with talk of [tens of thousands of premature deaths](#). But the number was always abstract, the identities of the dead unknown. Now, for the first time, campaigners have the name of a young victim they say died as a direct result of air pollution: Ella Roberta Kissi-Debrah, Rosamund's daughter, and if they can prove it they believe an invisible killer will become all too real.

Ella, who suffered from severe asthma, [died in 2013 at the age of nine](#). She had been suffering asthma-related seizures like the one which killed her for three years. Kissi-Debrah says her daughter, who grew up and went to school close to the busy South Circular Road in Lewisham, had cough syncope – a condition usually associated with long-distance lorry drivers who'd been driving for decades. "I couldn't work out why a nine-year-old child should have that," she tells me.

While Ella was alive, Kissi-Debrah sought a medical explanation for the condition. Now she is convinced it was related to air pollution, arguing that her daughter's lungs had been weakened over the course of her short life, with pollution spikes then triggering the attacks that repeatedly hospitalised her in the final three years. "When she first became ill, I just went to the GP and got normal antibiotics and thought 'a few days and that will be it'," recalls Kissi-Debrah. "But she developed this cough and it was really strange-sounding, like a whooping cough."

The cough persisted. On the third visit to the surgery the doctor referred her to a specialist, and eventually Great Ormond Street took over Ella's treatment. "By New Year's Eve 2010 she was in intensive care," says Kissi-Debrah. "It now turns out that all we were doing for the next two years was maintaining her. She would have times when the cough disappeared, but it was never long enough." Kissi-Debrah contends that the damage her daughter suffered to her lungs in the early years of her life condemned her to death.

Supported by the human rights lawyer [Jocelyn Cockburn](#), Kissi-Debrah is pressing for a new inquest into her daughter's death that for the first time would make it explicit that pollution was the cause. To get a second inquest, they will need to show there is new evidence that was not taken into account at the original investigation in 2014. Step forward Stephen Holgate, professor of immunopharmacology at the University of Southampton, [who has taken a fresh look at Ella's medical records](#) and concluded there is a "real prospect that without illegal levels of air pollution Ella would not have died".

NEED TO KNOW

Indoor air is a lot worse than outdoor air. Many health symptoms experienced by workers are caused by indoor air pollution, which is precisely why it's essential to keep the air inside your commercial building clean and safe. This not only promotes comfort among your employees but also protects their health.

Definition – Indoor Air Quality (IAQ)

Indoor air quality describes how the air inside a building or facility affects a person's health, comfort, and ability to work. It's a major concern to businesses, employees, and rental managers because indoor air can have a huge impact on the well-being and productivity of employees.

What causes poor (IAQ)?

Indoor air pollution is perhaps one of the most underrated health concerns in commercial and institutional buildings. And it isn't hard to see why. Outdoor air, when heavily polluted, can be easily noticed (dark smoke, toxic smell, and bitter taste). But indoor air is different. It hides behind the cool and comforting air blown by the AC and the calming smell of air fresheners. And because people don't see it, it's easy to dismiss the fact that it exists.

What makes indoor air polluted?

There are hundreds of air pollutants commonly found in homes and commercial facilities. Which include the following:

- **Cigarette smoke**

Even if you or your employees do not smoke inside the building, cigarette smoke can linger on the smoker's skin and clothes. That's why when a smoker enters the office, you could smell it right away. Cigarette smoke contains [more than 4000 chemical compounds](#), most of which are highly toxic and detrimental to the respiratory system.

- **Dust**

Dust and other environmental pollutants such as mites contribute to indoor air pollution. Without sufficient ventilation, these tiny pollutants can easily circulate around your office, triggering allergy **symptoms in some people**.

▪ **Mold and mildew**

When the temperature outside drops and the indoor air is heated, condensation can form around windows, causing moisture. High moisture content in indoor air provides the perfect environment for mold and mildew to thrive. Furthermore, if you have water damage issues in the office, there's a very high chance that mold and mildew are present too.

▪ **Chemical pollutants**

Building materials, office equipment; furniture, wall and floor coverings, upholstery, and virtually every commercially manufactured item in your workplace emit chemical pollutants. They include polybrominated biphenyl (PBB), polychlorinated biphenyl (PCB), polyurethane, formaldehyde, and VOCs.

Why has IAQ become so important?

- Public awareness of issues which can affect the workplace environment, which have been linked to poor indoor air quality;
- Investigations into indoor pollution;
- A growing number of ventilation hygiene organizations using pressure selling tactics to persuade facilities managers to buy ductwork cleaning services; and
- Changes in the way we work and where we work, which have given rise to concern over indoor air quality, particularly in call centers.

How do you establish whether indoor air quality is good or inferior?

To monitor this, **Indoor Air Quality** should be conducted:

- Outside air: Types and amounts of dust, bacteria and gases should be measured prior to being filtered, heated or chilled. This will act as a benchmark to demonstrate that the air inside your building is at least equal to the air outside.
- Indoor air: Dust and bacteria should be measured in the

workplace, to ensure that the filters are removing the majority of the contaminants from the outside air.

- Ventilation rates should also be measured, to ensure that they are satisfactory and are therefore removing contaminants such as carbon dioxide (which at high levels can cause lethargy).
- Specific gases, such as carbon monoxide and carbon dioxide, should be monitored to ensure that the levels present are within the occupational exposure limits established by HSE.

Detection – IAQ

The approaches taken to detect possible indoor air quality issues vary among organizations, but they normally include the following steps:

- Inspection of the ventilation system to see if a sufficient amount of outdoor air is taken in and properly distributed throughout the area and if the filtration systems are working.
- Ruling out possible triggers of symptoms such as thermal comfort, noise, ergonomics, poor lighting, etc.
- Testing for the presence of air pollutants (mold, asbestos, carbon monoxide, other chemicals, and toxic gases). This can be done using air testing kits. Samples are then submitted to the lab for analysis.

Health Effects of IAQ

- Symptoms related to poor IAQ are varied, depending on the type of contaminant. They can easily be mistaken for symptoms of other illnesses. The usual clue is that people feel ill while inside the building, and the symptoms go away shortly after leaving the building.
- Symptoms such as headaches, fatigue, trouble concentrating, and irritation of the eyes, nose, throat, and lungs are typical. Also, some diseases have been linked to specific air contaminants or indoor environments, such as asthma with damp indoor environments.
- Whenever excessive moisture is present within the workplace,

bacteria, mold, and fungi can grow and can lead to respiratory issues such as allergic reactions, asthma, coughing, wheezing, shortness of breath, sinus congestion, sneezing, nasal congestion, and sinusitis. Asthma is both caused by and worsened by dampness in the building.

- OSHA suggests that a proactive approach be taken to address IAQ concerns. Failure to respond expeditiously and effectively to IAQ concerns can quickly lead to more numerous or serious adverse health issues.

BUSINESS / REGULATION

The Environmental Protection Agency's (EPA) [Air Quality Index](#) identifies the ranges that constitute "good," "very unhealthy," or "hazardous" air, based on the levels of fine particulate matter in the air that are small enough to seep deep inside the lungs. To address these issues, the EPA suggests [certain measures](#) to fight indoor air pollution like purchasing brand new HVAC systems or energy-efficient appliances. It's a rather useless list of bullet points, though: Many people do not have the funds readily available to make these investments.

Both **California and New Jersey** have taken specific steps to address indoor air quality problems. The **California Air Resources Board** first [implemented regulations](#) in 2005 after University of California scientists conducted studies about the relationships between indoor and outdoor air. They found that "indoor air pollution is not currently well addressed by governments at the national, state, or local level," and that household air cleaners are often leaders in harmful emissions to the ozone layer. Yet the state hasn't done much since. The Air Resources Board website says that the most effective way to limit indoor air pollution is to "[minimize the release of indoor pollutants in the first place.](#)" That observation really doesn't help homeowners.

New Jersey regulates indoor air quality in "buildings occupied by public employees during regular work hours." When asked about indoor air regulatory developments on homes, a New Jersey Department of Health spokesman directed the *Prospect* to the workplace air quality [regulations](#)—which were implemented in 2007.

Several studies by the U.S. **Environmental Protection Agency (EPA)** regarded indoor air pollution as a major problem. While most commercial buildings don't have severe issues, even the most well-maintained buildings can have episodes of poor indoor air.

According to the **EPA**, poor indoor air quality can lead to productivity problems and increased absences among employees. It is estimated that all these health consequences cost the government billions of dollars each year due to medical care and productivity loss.

Legislative Requirements

Under the Health & Safety at Work Act etc. 1974 and the Occupiers Liability Act 1984, an employer has a duty of care to ensure that a safe and healthy environment is provided. The Approved Code of Practice accompanying the Workplace (Health, Safety and Welfare) Regulations, states that indoor air quality should be at least equal to, but ideally better than, the air outside your building. HSE document EH40 contains a list of maximum exposure limits and occupational exposure standards for specific gases as required by the Control of Substances Hazardous to Health (COSHH) Regulations.

Regulation 6 of the workplace (Health, Safety and Welfare) Regulations states that: "Effective and suitable provision shall be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air." The ACOP also states that "The air which is introduced should, as far as possible, be free of any impurity which is likely to be offensive or cause ill health". Regulation 7 relates to 'Temperature in indoor workplaces' and Regulation 8 states that "lighting should be sufficient to enable people to work, use facilities without experiencing eye-strain, and safely move from place to place".

Although the **Workplace Regulations** state that ventilation systems should be kept clean, they DO NOT state the frequency at which they should be cleaned. As long as you can demonstrate to the enforcement agencies that you are monitoring the quality of the air (and that your indoor air quality is good), you will be complying with these Regulations. **OSHA** responds to questions about

standards with letters of interpretation. **OSHA's letters of interpretation** specifically addressing IAQ issue can be found in Other Resources. The **General Duty Clause of the OSHA Act** (the law that created OSHA) requires employers to provide workers with a safe workplace that does not have any known hazards that cause or are likely to cause death or serious injury.

Takeaway

The number of people suffering from illness linked to poor air quality is unlikely to decline without decisive regulatory measure by federal and state officials. For now, most people are at the mercy of airborne chemicals and toxic fumes interacting in ways that are difficult for the average person to understand or control—which means Americans will have to follow Benjamin Franklin's suggestion to open the window, if possible, just to be safe.

STATISTICS

About 200,000 Americans are thought to die from air pollution each year, but scientists previously couldn't pinpoint the specific causes of death for almost half of those people.

The new research reviewed the medical records of veterans who died and compared them with the air pollution levels in their zip codes. They focused on PM 2.5, or inhalable particulate matter pollution that is 2.5 micrometers or smaller – a fraction of the width of a human hair.

They linked nine causes of death with the pollution: cardiovascular disease, cerebrovascular disease, chronic kidney disease, chronic obstructive pulmonary disease, dementia, type 2 diabetes, hypertension, lung cancer and pneumonia.

Three of those conditions were newly identified associations: **chronic kidney disease, hypertension and dementia.**

Miles Keogh, the executive director of a group that represents state and local air regulators, said: "We know people are harmed from exposure levels lower than the [current standards].

“The question is whether the trade-offs for society are worth it. If only a few people are harmed, maybe society accepts the risk,” Keogh said. “But when a study shows 99% of death occurring at exposure levels below that threshold, that should make us look much harder at whether the threshold protects people effectively enough.”

Because scientists cannot ethically expose subjects to air pollution and test the results, they must rely on existing epidemiological data. Veterans offered a massive source of detailed records held by the federal government.

In the United States, indoor pollutants like radon, the second-leading cause of lung cancer, cause an estimated [20,000 deaths](#) each year. Yet the hazards posed by these silent-but-deadly cocktails of chemical pollutants in many indoor environments have been largely underregulated and underreported compared to outdoor air issues. Federal and state officials have not moved as aggressively on indoor air quality as they have on outdoor air pollution even though Americans spend [90 percent](#) of their time indoors, often in airtight environments.

Indoor pollution costs California \$50 billion each year in medical expenses, lost worker productivity, and premature deaths. In 2013, World Health Organization experts estimated that California should plan for [over 200 new cancer cases](#) as a result of carcinogens from indoor air contaminants (primarily VOCs). Los Angeles is one of the most car-clogged cities in America and a leader in carbon emissions, but consumer and household products have surpassed transportation as the [dominant source](#) of VOCs in the city.

RECOMMENDATION

Based on findings here are recommendations below.

1. Maintain a communication system with employees for when building-related issues arise. Make sure to provide information on response actions to all employees, including posting exposure and environmental assessment reports. If not already formed, consider starting a health and safety

committee that consists of employees, management, and maintenance. This can help increase communication between employees and management and help alleviate concerns.

2. Evaluate your existing housekeeping program with attention to keeping horizontal surfaces dust-free and carpet cleanliness.
 - a. Vacuum the carpet regularly with a vacuum equipped with a HEPA filter. Ensure HEPA vacuums are well-maintained and the HEPA filters are changed according to the manufacturer's recommendations.
 - b. Use a damp cloth or mop on nonporous surfaces rather than dry materials to clean up dust. This prevents dust from becoming airborne and resettling.
3. Follow the manufacturer's recommended maintenance schedules for the HVAC system, including replacing air filters, checking drip pans, ensuring thermostats are in working order, and checking and cleaning ventilation system dampers to ensure proper functioning.
4. Maintain indoor temperature and relative humidity levels according to the guidelines discussed.
5. Routinely inspect the building for water intrusion and damage and correct these upon discovery. During and after heavy rains, walk through the building and check for water incursion.
6. Identify any potential sources of dampness or mold through visual inspection and make proper repairs to prevent further problems from occurring.
7. If dampness or mold is not identified during visual inspections but is suspected because of musty odors or continued health complaints, consider other methods (e.g., infrared camera or borescope) to look for hidden problems.
8. Monitor repaired areas to ensure repairs and remedial actions are effective.
9. Keep a record of when and where mold or water-damaged materials are discovered and what has been done to promptly fix the underlying problem leading to the water damage.
10. Evaluate the content or enforcement of current rules or policies surrounding personal workspaces that could be

contributing to indoor environmental quality concerns, including:

11. Acceptable locations for employee food preparation, storage, and consumption, including personal refrigerators and microwaves.
12. Employee fish tanks.
13. Fragrances in the workplace.
14. Establish an individualized management plan to relocate employees (such as at home or a remote site) who are still suffering from health implications even after response actions have been taken.
15. Encourage employees to report new, persistent, or worsening symptoms, particularly those with a work-related pattern, to their healthcare providers and, as instructed by their employer, to a designated individual at their workplace.

PREVENTION

How can one prevent the ill effects of IAQ?

For now, most people are at the mercy of airborne chemicals and toxic fumes interacting in ways that are difficult for the average person to understand or control—which means Americans will have to follow Benjamin Franklin's suggestion to open the window, if possible, just to be safe.

A preventative maintenance program includes:

- Ensure good quality and regular inspections of all critical components of the ventilation system.
- Regular inspections of all critical components of the ventilation system; regular inspections for conditions such as water leaks or stagnant water pools that would promote the growth of micro-organisms;
- Correction of any deficiencies found; repair or replacement of malfunctioning components, such as filters and belts, and cleaning of air distribution systems, ducts and dampers;
- Adequate treatment of open-water systems associated with ventilation systems, such as cooling towers and humidifiers;
- And maintenance of furnaces, space heaters and water heaters

to ensure proper burning and exhausting of waste gases.

The bottom line of appropriate prevention is to maintain a clean workplace.

Conclusion

Indoor air quality should be one of the most important concerns in your workplace as it directly affects the overall health and wellbeing of your staff and employees. Poor IAQ can increase the risk of many health problems, from respiratory illnesses to infections. It can even compromise your mental health.

Harassment and Discrimination

INCIDENT

She reported her boss had sexually harassed her – then she was fired

It started the day Wanda met her new boss.

After a successful interview, the man who would be overseeing her fundraising work walked her out down some stairs. As they made small talk, Wanda, felt his hands press on her shoulders and squeeze them.

The way he touched her was odd, Wanda thought when she got home. But she was thrilled by the prospect of her new job, something that made it easier to dismiss the encounter.

A few days into her new role, it became clear this was part of a pattern of inappropriate behavior.

Things escalated after Wanda caught her boss staring at her breasts repeatedly.

“He looked at my breasts, looked down at his genital area, looked back (at me), opened his palms and looked back down,” Wanda recalled.

“I’m in a state of shock that any man would do that and just keep going and pretend that nothing happened.”

Wanda says she confronted her boss about some of his behavior, but he denied it and told her he didn’t know what she was talking about.

As someone who comes from an abusive background, Wanda says her experience was even more traumatizing – especially the gaslighting.

Wanda decided to report the harassment to her employer in the spring of 2018, three years after it began. She says it took time to start the reporting process because her boss wielded a lot of power and was well-liked.

Wanda detailed the harassment to the department at her workplace that handled such cases and they conducted an internal investigation.

“For me to go up against a powerful person among the powerful circle by any measure ... was tough,” she says.

“(I felt) no one would believe me and everyone would blame me.”

After five months, the department determined her boss’s behavior did not violate the workplace’s harassment code.

Further, the investigator said there was a lack of reliable evidence to support that the alleged conduct was sexual in nature.

Shortly after the department closed the investigation, Wanda went on sick leave. Less than two weeks later, she was terminated.

“I was devastated. I was emotionally crushed,” she says.

NEED TO KNOW

Harassment in the workplace is a serious matter. Many lives have

been badly affected by sexual harassment, bullying and other forms of harassment.

Harassment is also a safety issue, because a distressed worker may be unable to concentrate on the job and stay alert to hazards. Harassment can also lead to workplace violence.

This kind of behavior is not tolerated in the workplace. If you ever find yourself a target of harassment, you do not have to put up with it. You have the law on your side to stop it. It is forbidden by company policies and union policies as well as by federal and state or provincial laws.

One type of workplace harassment is sexual harassment. Sometimes it is in the form of threats if the person does not go along with sexual advances, or promise of job rewards if the person does. Another type of sexual harassment is the creation of an intimidating or offensive work environment. Sexual pictures and offensive language are examples.

Sexual harassment can be physical and involve unwanted touching or physical assault. It can be verbal in the form of off-color jokes or non-verbal in the form of gestures. A male harassing a female is the common scenario, but females do harass males, and same-sex harassment also occurs.

Other kinds of harassment are also harmful. Hostility, teasing, ridiculing, humiliating or undermining another worker are all forms of harassment. When workers gang up on someone, it is known as mobbing. Victims of bullying and mobbing have been known to turn violently on their attackers and also to commit suicide.

Harassers have been known to pick on co-workers because of ethnic background, race, religion, physical ability, appearance, economic status and many other characteristics. The harasser may try to defend such behavior as friendly teasing and might actually believe this to be true, but if the recipient objects to the behavior, he or she has every right to ask that it stop.

Sexual harassment is [any unwelcome sexual advance or conduct on the job](#) that creates an intimidating, hostile or offensive working

environment. Any conduct of a sexual nature that makes an employee uncomfortable has the potential to be sexual harassment.

As an employer, you have a responsibility to maintain a workplace that is free of sexual harassment. It is your legal obligation!!!

Apart from the legal obligation to maintain a safe, sexual harassment, it makes perfect business sense. If you let sexual harassment in your business, you will pay a high price in poor employee morale, low productivity, and a flood of lawsuits and big legal bills.

Sexual harassment comes in many forms:

- A supervisor implies to an employee that the employee must sleep with him to keep a job.
- A sales clerk makes demeaning comments about female customers to his coworkers.
- An office manager in a law firm is made uncomfortable by lawyers who regularly tell sexually explicit jokes.
- A cashier at a store pinches and fondles a coworker against her will.
- A secretary's coworkers belittle her and refer to her by sexist or demeaning terms.
- Several employees post sexually explicit jokes on an office intranet bulletin board.
- An employee sends emails to coworkers that contain sexually explicit language and jokes.

The harasser can be the victim's supervisor, manager, or coworker. An employer may even be liable for harassment by a nonemployee (such as a vendor or customer), depending on the circumstances.

Who Can Be Sexually Harassed

Sexual harassment is a gender-neutral offense, at least in theory: Men can sexually harass women, and women can sexually harass men. However, statistics show that the overwhelming majority of sexual harassment claims and charges are brought by women claiming that

they were sexually harassed by men.

People of the same sex can also sexually harass each other, as long as the harassment is based on sex rather than sexual orientation, which is not a protected characteristic under Title VII. For example, if a man's coworkers constantly bombard him with sexually explicit photos of women, and this makes him uncomfortable, he might have a sexual harassment claim. If, however, a man's coworkers tease and belittle him because he is gay, that might not be illegal harassment under federal law as it is currently interpreted. However, such conduct may be illegal under laws enacted by certain states, or even cities. Even if this type of behavior isn't illegal, it also isn't appropriate, and savvy employers will put a stop to it promptly so everyone can get back to work.

The line between harassment based on sex and harassment based on sexual orientation becomes blurred when gender-based stereotypes are at play. Courts have held when a woman is harassed and discriminated against because she does not act sufficiently feminine; similarly, a man who is harassed for having effeminate mannerisms and gestures is protected. These same employees might not be protected if their harassers relied more explicitly on homophobic slurs and remarks. Again, however, smart employers won't parse the legal details.

BUSINESS / REGULATION

Discrimination or harassment in the workplace should never be tolerated – they undermine productivity and expose businesses to potentially costly lawsuits. Federal law protects employees from discrimination on the basis of race, gender, and a number of other protected characteristics. Federal law also protects employees from harassment, a form of sex discrimination that includes unwelcome sexual advances or taunts.

Discrimination in Employment

The Civil Rights Act of 1964 provides citizens and residents of the United States with protection from various forms of

discrimination in a variety of situations. One area in which discrimination is barred is in employment. This federal law prohibits employers from discriminating against employees or job applicants based on religion, sex, national origin, race or color. This law applies to employers who have 15 or more employees, but it's a good idea to abide by this law regardless of your company's size because it's good practice and there may be similar state laws that apply to smaller companies.

Depending on the type of discrimination, an employer will have to act in a certain way. For example, preventing religious discrimination involves also providing reasonable accommodations for the person's religious beliefs and practices. This includes not scheduling selection or examination activities that conflict with a current or prospective employee's religious needs. Of course, if the accommodation would cause an undue hardship to the employer, it's not considered "reasonable" and doesn't need to be instituted.

Sexual Harassment in Employment

Employers must provide a safe and secure workplace for their employees. Being safe and secure includes preventing sexual harassment at work. Sexual harassment is prohibited under the same laws that prohibit other types of discrimination, such as religious or race-based discrimination. Sexual harassment is defined as unwelcome sexual advance or conduct on the job that creates a hostile, offensive, or intimidating workplace environment. Sexual harassment can take many forms, and both men and women can be the victim of sexual harassment. As an employer, it's important that you prevent sexual harassment at your business by taking some easy steps:

- Train employees regarding sexual harassment.
- Monitor your workplace.
- Create a sexual harassment policy that is easy to understand.
- Encourage employees to come forward and take complaints seriously.

Following these steps will not only help you prevent sexual harassment at your business, it can also limit your liability in the event that sexual harassment does occur.

STATISTICS

The Equal Employment Opportunity Commission [released a report](#) earlier this year filled with Workplace Discrimination statistics for the fiscal year 2018. The report shows that the EEOC found a resolution for more 91,000 charges of occupational discrimination. Below you will find several more notable statistics from the report.

- There were 2,473 workplace discrimination charges in 2018
- Overall, victims of discrimination won financial damages totaling over \$505 million
- The number of retaliation charges stands at 39,469
- The number of sex discrimination charges reached almost 25,000
- Discrimination charges centered on religion totaled 2,859
- The number of age discrimination charges stands at 16,911
- The EEOC helped victims of sexual harassment acquire a total of \$56.6 million
- Race-related workplace discrimination charges totaled 24,600

The U.S. Equal Employment Opportunity Commission received 76,418 charges of workplace discrimination in fiscal year 2018

the 2018 total EEOC charges of 76,418 continues a [downward trend](#) over the last several years. In fact, from 2008 to 2016, the average number of charges was 94,000. In 2017, the total dropped to 84,254, and dropped again last year by a similar amount.

The FY 2018 data show that retaliation continued to be the most frequently filed discrimination charge filed with the agency, followed by sex, disability and race. The agency also received 7,609 [sexual harassment charges](#)—a 13.6 percent increase from FY 2017—and obtained \$56.6 million in monetary benefits for victims

of sexual harassment.

The charge numbers show the following top five reasons alleged, in descending order:

- Retaliation: 39,469 (51.6 percent of all charges filed)
- Sex: 24,655 (32.3 percent)
- Disability: 24,605 (32.2 percent)
- Race: 24,600 (32.2 percent)
- Age: 16,911 (22.1 percent)

EEOC's FY 2018 enforcement and litigation data's sizeable decrease in the total number of charges filed against employers—the number of charges filed was the lowest in over a decade.

But in of fiscal year 2018 there was a sharp increase in enforcement activity around sexual-harassment issues.

The EEOC filed 41 lawsuits alleging sexual harassment in FY 2018—a 50 percent increase from FY 2017.

Despite the drop in the total number of charges, the EEOC's statistics show a sharp increase in the number of charges alleging sexual harassment. The 7,609 charges alleging sexual harassment in FY 2018 is the highest number of those charges since FY 2011—a year when the EEOC received almost 24,000 more charges overall than it did in FY 2018.

PREVENTION

If you are the recipient of unwanted sexual attention or other forms of harassment, speak up. Tell the harasser you object to the behavior. You should make notes if incidents of harassment continue, including the times, places and witnesses. Report harassment to your supervisor or the person designated in your company to receive such complaints. Find out the company procedure for filing a complaint and for following it through until the problem is resolved. If the person doing the harassing is your supervisor, go to that person's boss.

If you observe harassment in your workplace, do something about it. Speak up and report the problem to someone in authority in your company. Countless cases of harassment have continued because bystanders did nothing about it.

Do not engage in harassment, and do not encourage it. Do not treat it as entertainment by laughing or gossiping at the victim's expense. Treat all of your co-workers with respect – and expect others to do so, too.

Employers must ensure the health and safety of workers and that other persons are not put at risk by the business. The process can be accomplished by the following measures.

1. Build good relationships in a respectful work environment

- Have a 'no sexual harassment-tolerated' work culture.
- Have a code of conduct that describes expected behaviors and what misconduct and serious misconduct is.
- Set the core values of your business.
- Promote good work relationships.
- Recognize and promote diversity.
- Set up a conflict management process.
- Set up a process for people to report sexual harassment.
- Set up systems to support workers at a greater risk of being harassed.

1. Educate workers about sexual harassment

Train employees at least once a year by conducting training sessions for employees. These sessions should teach employees what sexual harassment is, explain that employees have a right to a workplace free of sexual harassment, review your complaint procedure, and encourage employees to use it.

- Let your workers know what acceptable/non-acceptable work behavior is, and that sexual harassment will not be tolerated.

Train Employees on

- what sexual harassment is.

- what your sexual harassment policy contains.
 - what worker should do if they experience sexual harassment.
 - what workers can do if they see sexual harassment.
 - Ensure your induction for new workers covers the information above.
 - Talk about sexual harassment at team meetings and toolbox talks.
 - Put up posters reminding workers what's acceptable work behavior.
1. **Train supervisors and managers** at least once a year by conducting training sessions for supervisors and managers that are separate from the employee sessions. The sessions should educate the managers and supervisors about sexual harassment and explain how to deal with complaints.
 2. **Develop good managers**
 - Give your managers leadership training to help them effectively manage and supervise workers.
 - Expect managers to intervene early to call out and deal with any unreasonable behavior before it escalates.

1. **Make sure everyone knows their responsibilities**

- While businesses must effectively deal with sexual harassment at work, everyone at work has a role in dealing with it.
- Make everyone at work aware of their roles and responsibilities.

Workers

- have duties to take reasonable care for their own health and safety and to take reasonable care that they don't harm others while at work.
- must cooperate with reasonable policies and procedures about sexual harassment the business has in place that have been notified to them.
- must comply, so far as is reasonably practicable, with any reasonable instruction about sexual harassment given by the business so the business can comply with the law

- should report sexual harassment they experience or see so their business can do something about it.

1. Make your sexual harassment policies, processes and systems transparent

- Have a sexual harassment policy that outlines expectations for acceptable behavior and your commitment to deal with sexual harassment.
- Put in place a policy on alcohol consumption at work events.
- Make sure processes/systems cover how you will deal with sexual harassment including.
 - what training workers and managers will receive.
 - how workers report sexual harassment, and what protection/support they will receive.
 - how you will investigate and deal with reports.
 - how you will check that preventative measures are effectively managing the health and safety risks arising from sexual harassment.

1. Make sure your workers know how to report sexual harassment

- Make sure workers know that you want to be told when sexual harassment occurs, and will support and protect those who report sexual harassment.
- Set up multiple ways (formal, informal, anonymous) to report sexual harassment.

Tell workers:

- how to record instances of sexual harassment.
- the more specific information the better.
- how to report about sexual harassment they directly experience or see to you.
- what to expect after they report sexual harassment including how you will support and protect them from reprisals.

1. Provide protection and support to workers who experience sexual harassment or see sexual harassment

- Protect all the people involved (including both sides of the complaint, support people and witnesses) from victimization

(being punished, bullied, intimidated).

- Support can come from within the organization (trained sexual harassment contact persons) or other parties such as unions, or employee assistance programs.
- Provide the support as soon as possible after you receive a report of sexual harassment.

General principles for dealing with reports of sexual harassment

- Take all reports of sexual harassment seriously
 - Act promptly
 - Clearly communicate the process
 - Protect the people involved
 - Support the people involved
 - Maintain confidentiality
 - Treat everyone involved fairly
 - Keep good documentation
-

PPE – Eyes

INCIDENT

In the early 1990s, Troy Bridgeman worked for Hammond Power Solutions on Southgate Drive. It was a fun place to work and he made a lot of friends with people in the plant as well as with the office staff and managers.

Apart from his job as a transformer coil winder, he was a shop steward and a member of the health and safety committee.

The company had recently introduced a rule requiring everyone on the shop floor to wear safety glasses. It is a standard policy in most manufacturing facilities today, but back then it was met with some resistance. People argued the glasses were uncomfortable and unflattering and that wearing them all the time, even when they weren't brazing or doing some other potentially eye-threatening

activity, was unnecessary. They had worked in the plant for years without injuring their eyes, so why should they have to start wearing glasses now?

He wasn't a big fan of the new rule either but, as a committee member, he was obligated to help implement the policy.

The health and safety manager took his job very seriously and was always looking for ways to make the workplace safer.

He called a meeting with all the employees to address their concerns and shared a story about a personal experience he had regarding eye safety.

He told us that he wore safety glasses whenever he did yard work around his home and that he had taken a lot of ribbing from his neighbor because of it.

One day, he was mowing his lawn and, sure enough, his neighbor started making fun of his glasses. He tried to ignore him and carried on mowing the lawn until he heard his neighbor groan in agony. The blade from the lawnmower struck a stone, shattering it and sending shards in all directions. One of the fragments hit his neighbor directly in the eye and nearly blinded him.

The manager told the story with grave seriousness, but something about it was funny.

Perhaps it was the irony and the inappropriateness of laughing at his neighbor's misfortune during a serious company meeting. He tried to suppress the laughter, the stronger it came bubbling to the surface.

The health and safety manager were not impressed and centered him out.

He finally asked him if he found something funny about the story.

"No," he responded, summoning every bit of will power to stop laughing.

It wasn't the first or only time his sense of humor got him in

trouble, but it is the first time it came back to bite him years later.

He had a large hedge separating his yard from his neighbors on both sides. Twice a year he rented an industrial hedge trimmer to cut it back. A dirty, sweaty job and it is also dangerous.

He had never worn safety glasses while cutting the hedge, but this year decided to do so. However, when he couldn't find a pair in the house, after a short search, he carried on without them. After all, he never got injured trimming the hedge before.

Within minutes a rogue piece of shrub shrapnel hit him directly in the white of my right eye, cutting it so bad it bled.

The pain was excruciating and he feared he might have caused permanent damage. Luckily, he didn't, but did manage to find a pair of glasses after that.

Most of his friends laughed when he told them the story and asked why he wasn't wearing safety glasses.

He is embarrassed to admit it took 20 years and the threat of losing an eye to learn that valuable lesson.

Troy Bridgeman is a Guelph author and journalist. His column appears Wednesdays in the Guelph Mercury.

NEED TO KNOW

There are important steps that industry can take to protect the eyes of its workers.

The first step is to assess work areas for accidents that can be caused by impact, heat, chemicals, dust, glare and optical radiation. The second is to have a good, sound safety program in place that mandates that 100 percent of employees, managers and visitors follow eye safety rules.

BUSINESS / REGULATIONS

OSHA standards require

OSHA standards require that employers provide workers with suitable eye protection. To be effective, the eyewear must be of the appropriate type for the hazard encountered and properly fitted. For example, the BLS survey showed that 94 percent of the injuries to workers wearing eye protection resulted from objects or chemicals going around or under the protector.

There is not a one-size-fits-all standard for every industry, so safety managers must assess what types of safety gear to purchase. All safety glasses and goggles should be American National Standards Institute (ANSI Z87.1) certified for industrial eye protection, with the Z87 mark on the frames or lenses.

B.L.S FINDINGS:

- BLS reports that nearly three out of every five workers injured were not wearing eye protection at the time of the accident.
- Wearing the wrong kind of eye protection for the job. About 40 percent of the injured workers were wearing some form of eye protection when the accident occurred. These workers were most likely to be wearing eyeglasses with no side shields, though injuries among employees wearing full-cup or flat-fold side shields occurred, as well.
- BLS found that almost 70 per cent of the accidents studied resulted from flying or falling objects or sparks striking the eye. Injured workers estimated that nearly three-fifths of the objects were smaller than a pinhead. Most of the particles were said to be traveling faster than a hand-thrown object when the accident occurred.
- Contact with chemicals caused one-fifth of the injuries. Other accidents were caused by objects swinging from a fixed or attached position, like tree limbs, ropes, chains, or tools which were pulled into the eye while the worker was using them.
- BLS reported that more than 40 percent of injuries studied occurred among craft workers, like mechanics, repairers, carpenters, and plumbers.

- Over a third of the injured workers were operators, such as assemblers, sanders, and grinding machine operators.
- Laborers suffered about one-fifth of the eye injuries.
- Almost half the injured workers were employed in manufacturing; slightly more than 20 percent were in construction.

STATISTICS

Eye Injury Prevention Fact Sheet

- Each day, an estimated 2,000 workers suffer eye injuries on the job, which not only robs many of them of their sight, but also costs employers and insurance companies millions of dollars a year. These injuries incur more than \$924 million annually in workers' compensation, and nearly \$4 billion in wage and productivity losses, according to the U.S. Bureau of Labor Statistics (BLS). No dollar figure can adequately reflect the personal toll these accidents take on the injured workers. "Yet 90 percent of all workplace eye injuries are preventable with the use of proper eyewear and safety measures," said Daniel D. Garrett, Prevent Blindness America (PBA) spokesperson.
- According to the U.S. Consumer Product Safety Commission, in 2002, welding equipment contributed to more than 11,000 eye injuries treated in U.S. hospital emergency rooms, with power grinders and buffers coming in second with nearly 10,000 eye injuries.

PREVENTION

"An ounce of prevention will yield a pound of cure"

Wearing the **appropriate** eye protection far outweighs a pound of cure!!

BLS reported that more than 50 percent of workers injured while wearing eye protection thought the eyewear had minimized their injuries. But nearly half the workers also felt that another type of protection could have better prevented or reduced the injuries they suffered.

10 ways to prevent an eye injury in your workplace.

1. **ASSESS!**Look carefully at plant operations. Inspect all work areas, access routes, and equipment for hazards to eyes. Study eye accident and injury reports. Identify operations and areas that present eye hazards.
2. **TEST!**Uncorrected vision problems can cause accidents. Provide vision testing during routine employee physical exams.
3. **PROTECT!**Select protective eyewear that is designed for the specific duty or hazard. Protective eyewear must meet the current standards from the Occupational Safety and Health Act of 1970 and later revisions.
4. **PARTICIPATE!**Create a 100 percent mandatory program for eye protection in all operation areas of your plant. A broad program prevents more injuries and is easier to enforce than one that limits eye protection to certain departments, areas, or jobs.
5. **FIT!**Workers need protective eyewear that fits well and is comfortable. Have eyewear fitted by an eye care professional or someone trained to do this. Provide repairs for eyewear and require each worker to be in charge of his or her own gear.
6. **PLAN FOR AN EMERGENCY!**Set up first-aid procedures for eye injuries. Have eyewash stations that are easy to get to, especially where chemicals are used. Train workers in basic first-aid and identify those with more advanced training.
7. **EDUCATE!**Conduct ongoing educational programs to create, keep up, and highlight the need for protective eyewear. Add eye safety to your regular employee training programs and to new employee orientation.
8. **SUPPORT!**Management support is key to having a successful eye safety program. Management can show their support for the program by wearing protective eyewear whenever and wherever needed.
9. **REVIEW!**Regularly review and update your accident prevention policies. Your goal should be NO eye injuries or accidents!
10. **PUT IT IN WRITING!**Once your safety program is created, put it in writing. Display a copy of the policy in work and

employee gathering areas. Include a review of the policy in new employee orientation.