Committee on Missing Persons in Cyprus Health & Safety Manual

This manual contains information specifically intended for the CMP.

The purpose is to educate and to improve safety.

For related material:

www.safeworking.org

www.firstaid-cpr.net

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Introduction

Safety is no accident. Every worker has the right to a safe working environment. Every worker has the right to be properly trained. Every worker has the right to refuse unsafe work. It is everyone's responsibility to assure that any work undertaken meets safety requirements. There is no work that is worth risking life and limb. Safety can be achieved through a systematic approach to evaluating risks and seeking solutions to eliminating them. This begins with all members of an organization that wish to create a safe and productive work environment.

Although it may seem that increasing safety on the job will cost more, in the long run it is financially worse if someone becomes injured or killed, especially if there are legal repercussions, which many times there are. All employers, managers, etc., are responsible for what happens to their workers.

This manual is intended to offer information on how to improve Health & Safety (H&S). It is important to understand however, that every job is different, and modifications may be needed. It is also important to seek professional advice on the work site, e.g. an engineer, on how to make the environment safer.

Due Diligence

Quite simply put, every employer has a legal responsibility to make sure all employees, contractors, volunteers, or anyone else on the worksite, are not placed in undue risk. This means that they need to receive on-going adequate training, all their equipment is in safe and good working condition, first aid is readily available, reasonable steps have been taken to minimize hazards, etc. Employers cannot hide behind an attitude of, "I didn't know," or, "someone else was looking after that."

By: Peter Alexandrou

Risk Assessment

A risk assessment is a process by which a work site is evaluated for safety. It should be done before work commences by a competent, qualified, non-biased person.

1. Identify the hazards.

   A hazard is anything that can cause harm. It can be a chemical, electricity, falling objects, heights which can lead to falls, wet floors which can lead to slipping, etc.

   - Walk around and look. Imagine the place once workers arrive. What will they be doing? Where will they be walking?
   - Check all the equipment that will be used, e.g. ladders, electrical, scaffolding, etc.
   - Ask the workers if they can identify any risks.

2. Decide what kind of harm, and to whom, these hazards might inflict.
   - Keep in mind young and inexperienced workers. Have they been trained properly? Have they been paired up with a more experienced worker?
   - Will anyone else, such as visitors, contractors, be visiting the site?
   - Is the area open to the public either during the work being carried out or after hours?

3. Evaluate and implement precautions on the risks found.

4. Repeat assessment regularly. Work environments change, sometimes daily, risk assessments need to be done regularly. A danger that was not there yesterday might have presented itself today.

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General Safety

There are some very basic safety precautions that need to be undertaken regardless of the type of work environment that exists. Personal Safety Equipment (PSE) is the equipment that a worker wears or uses on the spot to increase safety. All PSE should be approved for the purpose of which it is being used for. E.g. sunglasses are NOT designed to withstand impact from debris; rain boots are not designed to withstand a crush injury if something falls on the feet, etc. PSE includes the following;

- Hard hats to provide protection from falling objects and from moving objects at ground level.
- Safety goggles to safeguard the eyes from dust or other debris, which can cause permanent eye damage. If performing welding then additional protection needs to be used to prevent internal eye damage. Regular eyeglasses do NOT offer adequate protection. Therefore safety goggles should be worn over regular glasses.
- Work gloves to protect the hands from cuts, crush injuries, chemicals, and electricity. Obviously the type of gloves used should be related to the type of work being carried out. For example, for chemical related work the gloves should be made of thick plastic and be resistant to the chemical being used.
- Steel toed safety boots or shoes, to protect the toes and feet from crush injuries or from sharp objects on the ground. If performing electrical work the type of boots worn should also provide relative protection.
- Brightly colored vests to increase visibility, especially if there are heavy machines operating in the area.
- Hearing protection to protect from loud or constant noises, which can cause permanent hearing loss, and/or tone deafness.
- Breathing barriers to protect lung damage from dust, fumes, or chemicals. There are different types of breathing barriers, and the ones used need to offer adequate protection from the type of work being carried out. For example, a thin plastic mask over the mouth and nose will not provide adequate protection from gases.

General Safety Equipment

- A first aid kit: well stocked, and checked regularly to replace used up supplies. The kit should be clearly visible and should never be locked up.
- A first aid manual as a reference.
- A fire extinguisher: there are different types based on the material it will be used on, make sure this is investigated first. There should be at least one extinguisher for every work area or for every room. It needs to be clearly visible and everyone should be shown how to use it. The extinguisher also needs to be checked monthly to make sure the charge is in the correct position, and replaced if there is a problem or if it is used.
- A landline phone available only for emergency calls. If a mobile is used it must be confirmed that a strong enough signal exists in the area before any work is commenced.
- An information sheet by the phone with instructions on how to get help, including directions to the location of the site.
- An eye was station, or water bottles.
- MSDS: Material Safety Data Sheet for information on all chemicals on the site, even things like paint thinner should have an MSDS.

Other Factors

- If there is risk of falling objects steps must be taken to prevent this.
- At least 1 of every 4 workers, with a minimum of 2 workers, should be trained in first aid & CPR.
- Outdoor work should be discontinued during an electrical/lightning storm.
- Outdoor work should be discontinued in heavy rain, or in any other unfavorable weather, e.g. strong winds.

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First Aiders In The Workplace

All employers, regardless of the environment, are responsible for making sure that any injured worker will receive immediate and adequate first aid treatment. First aid is not limited to minor cuts and scrapes, it can also include dealing with severe injuries and illnesses, as well as heart attacks and strokes. In order to be able to accomplish this the employer must make sure that enough people, in every work area (e.g. excavation site, floor of a building) are trained in first aid. Several people must be trained to accommodate absentism, workers being on vacation, turn over of staff, and the risk of the trained first aider also requiring assistance.

The employer is responsible for providing safe and adequate transportation of an injured worker to medical facilities. Pending on the situation this may mean calling an ambulance, or in minor non-life threatening situations, arranging for a taxi. Employers must also have a method of reporting and collecting accident information, and this collection must be surrendered to authorities if requested, and to government health and safety inspectors.

The employer is responsible for maintaining adequate first aid supplies in the form of a first aid kit on site at all times. If it is a large work area they should also have a first aid room. A competent worker, or a group of workers if it is a large environment, should be made responsible for assuring first aid kits are maintained, but the ultimate responsibility rests on the employer.

If a worker has a medical condition this should be made known to at least 2 other workers. If medication is taken the other 2 workers should know where it is kept and what it’s for.

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First Aid Kit Contents

- Rescue breathing masks, which reduces the chance of disease transmission if rescue breathing is administered. A Bag Valve Mask is another option, but requires additional training.
- Gloves for the rescuer incase there is bodily fluids in the area, again, to reduce the chance of disease transmission. Non-latex gloves are best.
- Triangular bandages for splinting and slinging.
- Sterile dressings of various sizes. These are used to control severe bleeding.
- Bandages for minor cuts or scrapes.
- A few sugar cubes or sugar sacks incase someone suffers from hypoglycemia.
- Aspirin incase of a heart attack. More is discussed in a first aid course about this issue.
- Scissors incase clothing needs to be cut.
- Tweezers for removing non-serious splinters. They should never be used to remove anything from the eyes or the ears.
- Tensor bandages, which are ideal for wrapping a twisted joint until they reach the hospital – beware of not to restrict blood flow as this can lead to further injury.
- Portable oxygen may also be considered, but requires additional training and may be flammable in inappropriate conditions.
- A defibrillator, again, additional training is required. This machine is vital for heart attack victims.
- If there is a first aid room there should also be a bed, stretcher, and a wheel chair.

Notes:

- If someone has a specific medical condition they should always have their own medications with them at all times.
- Medicine (with the exception of Aspirin), anything with needles, etc., should not be kept in a first aid kit. This type of thing is above the training of first aiders and can lead to legal complications.

Rescue Plan

Regardless of efforts made in preventing accidents, they will still occur. It is therefore vital that an action plan be in place at every site to deal with accidents. The following must be considered at the start of opening a new site;

- Assure that mobile service is adequate in the area.
- Location of the nearest hospital and driving directions.
- Location of the nearest fire department.
- The most optimal method of contacting the local fire department.
- Have written instructions on how to guide rescuers to the site.
- Considering letting local authorities know of the work being done and the location.
- When excavating one person should remain uninvolved in the procedure. They should be available incase an accident occurs, and should be in a position so that they will not be involved in the accident. For example, in the situation of a well excavation, one person must always remain at the top and be ready to assist. This person must have a mobile that has a strong enough signal, and can communicate in the language needed with rescue workers.

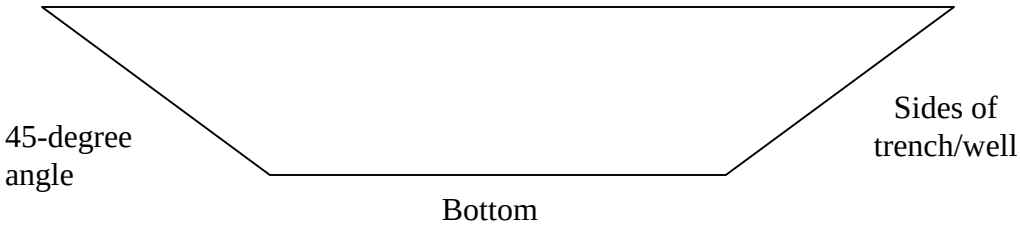
Excavating

An excavation is basically an area where workers have removed earth. It can be a few feet to several meters. An excavation needs to be considered as a temporary structure. During an excavation, whether it is a trench or a well or any other type of digging, there is almost no way to assess how secure the surrounding walls are. Therefore it must be assumed that all excavations have a strong potential to collapse. The question is not ‘will it collapse’ but rather ‘when will it collapse.’ This risk becomes greater when there is heavy machinery at the surface, removed soil is piled near the edge, after heavy rain fall, or if there is water inside the trench.

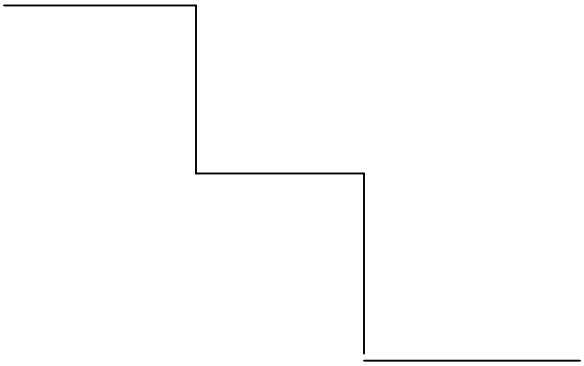
Excavating involves either a well, a trench, or a combination of both. Regardless of the type, the inherent risks must be realized and steps must be taken to reduce these risks. Any time there is digging a hazard is created. This is because an unstable structure is created which can collapse without warning. Anyone caught in this collapse can suffer serious injury or death. In addition, secondary collapses can also injure or kill rescue workers. Even at a depth of just a couple of meters there is a risk of a wall collapsing. Many excavations reach depths of 15 meters, therefore steps must be taken to reduce risks to scientists by reducing the chance and the severity of the potential collapse.

Two Basic Approaches to Making Excavations Safer:

1. All digging needs to be at 45 degrees, creating an ice-cream cone formation all the way around. This reduces the risk of a collapse. And, if by chance there is an area that gives out, it will be minor in comparison.



2. Creating steps all the way around. Each step height should not exceed 2 meters, and the step width (the area for standing) should not be less than the step height (2 meters).



3. A third possible option is to place strong support beams from one wall to the other. However, this requires heavy equipment, an engineering expert, and would also prevent the diggers from moving freely. Therefore it is not a feasible solution, but worth mentioning for future consideration.

Safety measures at the site;

- As soil is removed it should be placed at least 3-4 meters away from the edge.
- Ramps should be wide enough to allow easy access, even when the digger is in place. E.g. the width should be twice as much as the width of the digger. This is vital incase an emergency occurs and fire personnel must enter the area.
- If it is seen that the well will be deeper than first predicted measures need to be taken to widen the area, as explained above.
- All scientists must wear hard hats when they are working in an excavation.
- Hearing protection must be used when there is excessive noise, e.g. from the digger or from a water pump.
- Eye protection must be used when there is a risk of debris entering the eyes, e.g. when using tools to dig or to chip away at soil or rocks.
- Warning safety tape should be placed all around the edge of the excavation and workers should stay behind this tape at all times. The safety tape should be at least 2 meters from the edge. At the end of the day the entire area should be secured with tape and warning signs.
- At no time should workers or scientists approach the edge of an excavation. The minimum safe distance is 2 meter.
- Scientists should not be using the digger to be lifted up so they can take pictures from higher up. If the CMP has a requirement for pictures to be taken from above ground level then this needs to be done in a safer manner. For example, there are specially designed machines that scientists can use to lift them to the required height.

- Except for the driver, no one else should be standing on the digger or sitting in the cabin, unless that particular machine is designed to have an extra passenger.
- No one else, other than the driver contracted by the CMP should be operating any digger, truck, or other heavy machine or vehicle.
- No one else, other than trained operators, should be operating, or sitting in, a digger or any other machine.
- Scientists should not be using the basket to be lowered into a well. If the well is safe to enter ladders should be used instead. These ladders will need to be properly secured and supervised by someone that will not be climbing.
- When machinery is in use, all scientists will stand a minimum of 3 meters away from the radius of any moving parts. E.g. when a tractor is clearing soil that has been sieved, all workers will move 3 meters away.
- If scientists must be close to a machine during operation they should wear bright colored vests to be more visible, as well as hard hats in case there is an impact. In addition, scientists should not move in front of the digger arm unless they have indicated to the driver and the driver has acknowledged their intentions.

The desire to finish quickly, regardless of the reason, should never replace or reduce safety precautions!

Vehicle Safety

If there are work vehicles involved, especially if they are used to transport workers, the following should be adhered to;

- All drivers should have the necessary driver's license and proper insurance.
- The number of workers in a vehicle should not exceed the number of passengers the vehicle is designed to transport.
- All drivers/passengers should wear seatbelts.
- All drivers should obey all posted speed limits and other road regulations.
- All drivers who start feeling tired should ask for a replacement.
- All drivers should be 100% free of alcohol, drugs or medication that may affect driving ability. If medication is being taken by a driver a physician's advise should be sought regarding operating a vehicle.
- Vehicles should be well maintained, with all recommended service schedules adhered to.
- Vehicles should not be used for tasks other than what the vehicle is intended for.
- Non-workers should not be transported in work-intended vehicles.
- Tire pressure should be checked regularly to assure proper traction.
- If any mechanical problems arise they should be reported to the supervisor immediately.
- Unsafe vehicles should not be used.
- Vehicles should not be used to perform functions that they were not designed to perform, e.g. carrying heavy loads with a vehicle that is not designed with that purpose.
- Drivers should not be using a mobile phone to make calls or to text. Even if it's hands free it is still hazardous as the driver is mentally distracted.
- Both hand should be on the wheel at all times, unless using other driving controls, in which case at least one hand is on the wheel.

Machinery

All workers should be properly trained on any machines they will be coming in contact with, and a competent worker or supervisor should monitor this training, with the employer being ultimately responsible. Machines are extremely dangerous, because they are often large and heavy, have a lot of power, and often moving parts. But the biggest risk comes from inappropriate and unsafe operation. Besides deaths, machines can cause amputations, crush injuries, severe cuts, head trauma, blindness, and hearing damage.

General Machine Safety Recommendations

- Obtain proper training specific to the machines that will be used.
- Some large machines may require a license to operate. Employers are responsible for making sure this is adhered to.
- Maintain machines in good working order, e.g. blades, belts, electrical cords.
- Do not operate a machine other than in the environment intended, e.g. in rainy conditions, do not operate an electric mower on a wet lawn, do not use a fume producing machine in a closed area, etc.
- Always check manufacturer's recommendations for more information.
- Use personal safety equipment: hard hats, safety goggles, work gloves, steel toed safety boots/shoes, brightly colored vests, hearing protection, breathing barriers/filters.
- Do NOT wear lose clothing as it may get caught in a moving part.
- Long hair should be tied up and kept under the hard hat so that it will not get caught in a moving part.
- A competent worker should regularly inspect all machines. If any faults are discovered the machine should be put out of service until it is repaired. For example, backing-up beeping signals on trucks, mirrors, warning lights, etc.
- Know where the emergency button is on all machines, and test it periodically.
- If the machine requires lubrication make sure it is maintained so it will work properly.
- If fuel is required make sure it is stored in a safe manner.

- Do not smoke near machines, especially if gas powered.
- If there are fumes operate in a well-ventilated area, or use a breathing filter.
- If maintenance is required turn off the machine and remove from the power source – if it uses electricity.

Large Vehicle Safety Recommendations

- Licensing and training is a must for anyone operating a digger, tractor, loaders, etc.
- No one, other than the trained operator, should be operating the machine.
- No one else should be on/in the machine unless it is intended to have an extra passenger.
- Machine must be properly maintained, including lights, warning signals, mirrors, etc.
- Should not be operated near workers. If this is a necessary all workers must wear brightly colored safety vests, and one worker must be appointed to guide the driver.
- Do not operate the machine in unsafe areas, e.g. severe slopes, wet/slippery ground, if it is not intended for that kind of operation.
- Driver must wear seatbelt. This will keep the driver in the vehicle incase of a rollover or another accident.
- Never refuel while engine is running.
- If engine work is required, e.g. adding water, let the engine cool off first.
- Vehicles should be fitted with a rollover Protective Structure (ROP). This is a metal cage (there are different designs), which protects the driver in case of a rollover.
- Falling Object Protective Structures (FOPS) should be fitted if there any risk of falling objects, e.g. trees or branches when tree cutting, rocks, etc.
- The operator's seat should be fully adjustable and well cushioned to reduce vibration. The backrest should support the lower part of the spine to reduce postural stress to the spine.

By: Peter Alexandrou

Lifting Heavy Objects

In many work sites, or work environments, lifting is simply part of the job. When machines cannot be used for such work, it must be done manually.

Safety Precautions

- If something is heavy ask for help.
- Communicate with your lifting partner as to when to lift, where you are going, etc.
- Wear work gloves that prevent slippage.
- Divide the load in half if possible.
- Use lifts and hooks to lift.
- Lift with your knees not your back. Bend at the knees to grab the object. Keep the back as straight as possible in its most natural position. Lift up using your knees keeping the back in the same position.
- If possible have one foot slightly in front of the other or keep the feet slightly apart for stability.
- Don't twist your back when you need to turn, take small steps instead. Twisting of the back makes it weaker.
- Some experts recommend wearing a lifting belt to add extra strength to the back.
- Keep the object as close to the body as possible.
- If it's a long distance that an object has to be carried take a break half way.
- Realize that there is a limit as to how much one can lift safely.

Heights

When working at a height, even a few feet, safety precautions need to be taken. Most workers underestimate the seriousness of working at a height, especially if the height is only a few feet. But falling even 3-4 feet can cause broken bones and even concussions.

Safety Precautions

- All work is planned.
- All workers are competent.
- The surface is secure and non-slip.
- Install handrails if possible, or a strong rope or a chain.
- Avoid working in poorly lit conditions.
- Avoid working in poor weather, e.g. rain, wind.
- Use properly secured ladders to reach the surface.
- If material needs to be lifted or lowered use proper hoisting techniques. Do not throw it down and do not climb while holding it.
- Do not stand on fragile surfaces unless it has been properly reinforced.
- The platform should be large enough to stand on without getting close to the edge.

Ladders

- Secure the ladder at the top so it will not slide sideways.
- Someone should be at the foot of the ladder holding the ladder with both hands.
- Use ladders that have rubber non-slip feet.
- Do not use ladders on slippery surfaces.
- The base of the ladder, from the wall, should be ¼ of the height of the ladder. E.g. if the height is 8 feet, the ladder legs should be 2 feet from the wall.
- At the top, the ladder should extend at least 1 meter.
- Do not use near electrical wires.
- Do not move a ladder when it is extended.
- Do not use a ladder other than for its intended use, e.g. do not use as a scaffold.
- Do not carry objects while climbing a ladder.
- Do not over reach on a ladder.
- If a ladder appears damaged in any way do not use.

By: Peter Alexandrou

Electricity

Electricity is all around us, yet most of us do not know the basics of how it works and the damage it can cause. Electricity can kill, it can cause fires, and it can cause explosions. And all this can happen within seconds. In addition to immediate dangers, improperly installed or maintained electrical boxes or appliances can be fatal months or even years later. It is therefore imperative that a certified electrician carries out all electrical work.

Safety Precautions

- Make sure you know the location of overhead and underground power lines.
- If there is digging use a cable locator to find buried wires then mark these findings clearly so all workers are aware.
- A certified electrician should assure that there is no power to any areas where work is being done.
- If electrical work is being done it should only be carried out by a certified electrician, no one else should be assisting.
- If power can not be disconnected because equipment needs to be used make sure;
  - Consult an expert as to the best way to proceed.
  - All workers are aware of this.
  - Place clear notices where there are live wires.
  - All exposed wire ends should be covered with electrical tape.
  - All electrical wires should be protected from damage by equipment or by workers walking.
- If using electrical equipment on the job check;
  - For damages to the cord itself, as well as the plug and the area where it connects into the machine.
  - Check for melted areas or burn marks on cords, and on machines, that suggests over heating.
  - That the electrical supply is suitable for that piece of equipment.

- That the worker is trained to use that equipment and that they are using the required personal safety devices.
- Do not proceed if there is water in the area, or if it is raining and you are outdoors.
- Consider using a Residual Current Device, which reduces the seriousness of personal injury from electricity. But this device should only be used as extra precaution.
- Assure that no one is smoking, and that there are no flammable materials in the area.
- Reduce tripping hazards by taping down any wires.
- Do not proceed with any work if something is not safe.

The Effects of Electrocution

- Uncontrollable muscle spasms, perhaps to the point that they cannot let go of the electrocuting object/wire.
- Breathing problems.
- Cardiac arrest or arrhythmia (irregular heart rhythm).
- Burns from the actual electricity at the entrance and exit points.
- Burns from touching an object that has been made hot by electricity (thermal burn).

DO NOT TOUCH ANYONE THAT IS BEING ELECTROCUTED UNTIL THE POWER HAS BEEN TURNED OFF AT THE SOURCE!!!

By: Peter Alexandrou

Severe Sun Exposure

It is a well-known fact that over exposure to the sun's rays can cause severe skin damage and even skin cancer.

Safety measures;

- Try to complete outdoor work early in the morning or later in the afternoon.
- Put up tarts to provide shade.
- Work under natural shade, e.g. trees when possible.
- Wear protective clothing: wide brimmed hats, long sleeve shirt, long pants, keep the back of the neck covered.
- Use sunscreen and reapply regularly.
- Drink plenty of fluids throughout the day.
- If feeling really hot or ill take a break to rehydrate and to rest. Make sure you have adequate shelter.
- Never work alone, as no one can help you if you become ill.

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Severe Heat Exposure

If the body cannot rid itself of the heat it is producing, or being exposed to, it will literally overheat. The body's normal temperature is around 37^0C. Anything above a couple of degrees and things begin to shut down, including the brain and organs. Workers working outdoors in hot environments are the most susceptible. Factors that might make it worse include; heavy clothing, humidity, medical conditions, certain medications, lack of acclimitization, dehydration, age (young and old are more susceptible), etc. There are three major levels of severity; heat cramps, heat exhaustion and heat stroke.

Heat Cramps: Severe muscle cramps, sweating, feeling tired.
Heat Exhaustion: Muscle cramps, sweating, slight headache, feeling tired.
Heat Stroke: Severe headache, sweating may stop, pale dry skin, nausea or vomiting, very weak and tired, weak irregular pulse rate, shallow fast breaths, very disoriented or even unconsciousness.

Safety Precautions

- Take regular breaks and drink plenty of fluids (juice, water, not coffee and alcohol).
- Monitor for warning signs and stop activity if needed.
- Use a schedule where most work is done in non-hot times of the day, if possible.
- Wear protective clothing.
- If new to this type of work allow some time for acclimatization.
- Have proper ventilation in the work area.
- Use fans and air-conditions.
- Reduce humidity.

By: Peter Alexandrou

Lightning / Electrical Storms

Every second in our atmosphere there are about 100 lightning strokes. Because our bodies, especially our hearts, work primarily with electrical impulses, we are very sensitive to electrical discharges, even ones much smaller than lightning bolts. Being hit by lightning can lead to broken bones, cardiac arrhythmia, severe burns, and death.

If you see storm clouds approaching it means you need to take precautions immediately. If you can see or hear lightning it means you are already within striking distance - take cover immediately. Many times lightning occurs without rain. So waiting for rain before taking cover is not safe.

Safety Precautions

- If you are using any type of machine turn it off and unplug it. This includes machines at work, computers, TVs, etc.
- Do NOT stand under or near a tree. If the tree were to get hit there would be so much heat produced that you would probably die, even if you don't get hit directly.
- Do NOT stand near a window. The electric current may travel through the outside walls of a building making you susceptible to electrocution.
- Do NOT hold anything metal, e.g. umbrella, golf stick, etc., above your head.
- Do NOT stand near electrical appliances, e.g. TV, or use a landline phone. If lightning were to hit a pole or antenna the current could travel to the appliance. This also applies to equipment at the work place.
- Avoid being in high places, near light poles, near communication towers, metal bleachers (the kind at football stadiums), metal fences, golf carts, or open water (lakes, rivers, ocean/sea).
- If you are driving do not get out of the car. Getting out will make you much more exposed. If the storm becomes severe pull over but don't touch any metal parts of the car, as they can conduct electricity if there is a strike near by.

By: Peter Alexandrou

Hazardous Chemicals

When working with chemicals it is important to take safety measures. Chemicals can enter the body via three methods; inhalation (by breathing), absorption (through the skin), and ingestion (through the mouth). In addition, chemicals can take any of the following forms; dust, vapor, gas, solid, or liquid, and all can be equally harmful. Some chemicals, such as acid, can cause immediate harm while others cause health problems years later. Two good examples of this are; chlorine will cause severe lung damage immediately, while asbestos can cause lung cancer years after exposure.

Any chemical purchased for the work or for the home is legally suppose to include an MSDS or a Risk and Safety Statement. These sheets are supposed to list information such as;

- Properties of the substance.
- Proper procedures for handling and storing the substance.
- Physical data such as its boiling point, melting point, etc.
- What protective equipment should be used.
- What needs to be done if a contamination occurs.
- First aid procedures and health effects.

Safety Precautions

- The protective equipment to be used will depend on the type of work being done and the chemicals that are being used. Make sure that the equipment is designed to offer enough protection, e.g. a latex glove will not provide any protection at all from a corrosive chemical.
- Personal protective equipment:
  - Breathing barriers to prevent the inhalation of gases or fumes.
  - Eye protection to protect from splashing of liquid chemicals.
  - Rubber gloves to protect from corrosive liquids.
  - Rubber aprons.

  - Rubber boots.
- Make sure there is adequate ventilation, and/or a method of expelling the chemical.
- Have clear exits in case an accident occurs.
- Block off the work area so others don't enter.
- Have fire extinguishes readily available.
- Do not work alone.
- In some cases one worker should always be outside the immediate danger area so they can obtain assistance should an accident occur.
- Have wash stations at work incase of an accident.
- Change clothing before leaving work, so as to not bring chemicals into your home.

If an accident does occur, even if there are no injuries, a report must be filled out and the supervisors must be notified immediately. In addition, immediate steps must be taken to prevent a similar accident from happening.

Ergonomics

Ergonomics is a large term that is often used to show how humans interact with their work environment. It can be something very simple, such as the height and angle of a desk for an office worker, to something more complex, such as how a health care worker moves a patient. It is related to the health of the musculoskeletol system. And if ignored, can cause severe and permanent chronic injuries. Obviously prevention is much more cost effective than trying to treat the problem once it has developed.

Types Of Activities That Lead To Injuries

- Movements, which are repeated many times, especially without rest. E.g. shoveling, seiving.
- The force that needs to be exerted to accomplish a specific task. Obviously, the greater the force the greater the risk.

- Vibrations, such as in construction work when operating machinery.
- Prolonged cold temperatures, which can damage joints.
- Awkward and prolonged body posture, especially if there is no movement. E.g. someone that is picking vegetables from the ground and is bent over for many hours.
- Unnatural posture, such as slouching on a chair while working.
- Repeated lifting above body height. This can lead to shoulder injuries.
- Unsafe lifting techniques.

Examples Of Chronic Injuries

- Tendonitis: swelling of a tendon that results in pressure on the surrounding nerves. This usually occurs from repeated movements.
- Rotator cuff/frozen shoulder: an injury that prevents full range of motion.
- Carpal tunnel syndrome: very similar to tendonitis but is specific to the wrist.
- Muscle strains, usually of the lower back. Can be chronic or can occur immediately. Usually a result of lifting improperly or lifting a heavy object.

Safety Precautions

- Regularly assess the work environment for potential ergonomic related risks and take steps to reduce them. Sometimes very minor changes can lead to huge improvements.
- Accept suggestions from employees.
- Avoid prolonged repeated activities.
- Use proper equipment. E.g. lifting machines.
- Make sure your work environment is suited for your needs. E.g. chair height, desk height, work boots size, etc.
- If an injury occurs seek medical advice. These injuries rarely go away by themselves.
- Practice proper use of equipment, tools, etc.
- Learn to recognize the warning signs of an injury and seek help immediately.
- Recognition of MSDs and their early indications.

Stings & Bites

If bites occur medical attention should be sought immediately and first aid administered. To reduce the risk;

- Wear high-cut shoes.
- When walking through brush make noise to scare away snakes.
- Wear gloves when working with soil.
- If allergic always carry medication.
- If stings from bees occur there is normally no immediate danger unless the person has an allergy to bee stings.
- Stings from other unknown insects should be taken more seriously and the person should be monitored for signs of a reaction.

Biological Hazards

A biological hazard is somekind of foreign material that can lead to illness or death. The most common kinds are virus or bacterium. For CMP the ones to be concerned about are; hepatitis, Lyme disease, rabies, and tetanus. All scientists and workers should be immunized against Hepatitis A & B, and Tetanus. If an animal bite occurs medical attention is needed and the rabies vaccine must seriously be considered.

Safety Precautions

- Wear personal protective equipment (gloves, mask, aprons).
- Immunization.
- Keeping wounds covered properly.
- Regular checks of potential infections.
- Regular proper hand washing.
- If infected avoid infecting others.

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For related material:

www.safeworking.org

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