MAJOR PROGRAM POINTS

"PERSONAL PROTECTIVE EQUIPMENT"

Training for the
OSHA PERSONAL PROTECTIVE EQUIPMENT STANDARDS

Quality Safety and Health Products, for Today...and Tomorrow

Outline of Major Points Covered in the "Personal Protective Equipment" Course

The following outline summarizes the major points of information presented in the course on Personal Protective Equipment. The outline can be used to survey the course before taking it on a computer, as well as to review the course when a computer is not available.

- **Every day, thousands of employees like you risk serious injury while on the job. They are in danger of being:**
  - Struck.
  - Cut.
  - Burnt.
  - Blinded.
  - Electrocuted.

- **The hazards they face range from crushing machine parts... to caustic substances... to falling objects.**

- **Despite these threats, however, the majority of these workers remain safe.**
  - This is because workplace tragedies can be averted by using Personal Protective Equipment, or PPE, as it's commonly called.

- **What is PPE? It's anything that you wear to prevent or minimize injuries. It can include:**
  - A hard hat.
  - Eye protection.
  - A pair of work gloves.

- **But Personal Protective Equipment can only prevent injuries if you use and maintain it properly.**
  - Unfortunately, not everybody does.

- **Even with all of the protection that is available, Occupational Safety and Health Administration (OSHA) statistics show that on-the-job injuries are still widespread.**
  - For example, OSHA estimates that 2,500 eye injuries occur in the workplace every day.

- **Crippling injuries have reached alarming proportions. Each year, over 570,000 employees are hurt while on the job, experiencing:**
  - 320,000 hand injuries.
  - 70,000 eye injuries.
  - 70,000 head injuries.
  - 110,000 foot injuries.

- **These injuries typically occur for two reasons:**
  - The injured workers' PPE didn't provide full protection.
  - The PPE that was available wasn't being used.

- **For example, one study showed that 70% of the workers suffering hand injuries were not wearing gloves.**
  - The remaining 30% of the injured workers were wearing damaged or inappropriate gloves.

- **In response to this pattern of injuries, OSHA finalized a series of standards for Personal Protective Equipment in 1994.**
  - The first of these, 29 CFR 1910.132, details the General Requirements for all PPE use.

- **This is followed by six standards that cover specific types of protective equipment:**
  - 1910.133 (Eye and Face Protection).
  - 1910.134 (Respiratory Protection).
  - 1910.135 (Head Protection).
  - 1910.136 (Foot Protection).
  - 1910.137 (Electrical Protective Devices).
  - 1910.138 (Hand Protection).

- **OSHA believes that these standards have made workplaces safer, preventing:**
  - 712,000 lost workdays.
  - Four fatalities each year.

- **In this course, you will learn a number of things about PPE, including:**
  - Selection.
  - Use.
  - Maintenance.
  - Training that is needed.

- **Start by looking at 29 CFR 1910.132, the regulation that contains general requirements for <u>all</u> Personal Protective Equipment.**
  - This OSHA regulation states that you must use proper PPE wherever you encounter hazardous conditions.

- **These situations include:**
  - Dangerous procedures, such as some assembly line and woodworking jobs.
  - Environmental hazards (any features of a worksite that could hurt you, including falling objects, dangerous contaminants and open pits).
  - Chemical hazards (substances that could both rapidly injure you, and those that could have long-term effects on your health).
  - Radiological hazards (a category encompassing all sources of radioactivity).
  - Mechanical irritants (any objects that could puncture or cut your skin).

- **Whenever one of these conditions is present, your employer must provide you with Personal Protective Equipment that is:**
  - Appropriate for your work conditions.
  - Properly maintained.
  - Sanitary.

- **In some cases, workers may want to use their own Personal Protective Equipment, instead of PPE supplied by their employers.**
  - No matter who owns the equipment, however, employers are ultimately responsible for its suitability and upkeep.

- **The Standard also mandates that you receive PPE training. After you complete this instruction, you must know:**
  - When PPE is necessary.
  - What PPE is required for your job.
  - How to properly don, doff, adjust, and wear PPE.
  - Limitations of your PPE.
  - Proper maintenance.
  - The useful life and disposal of PPE.

- **You will also be retrained in these areas whenever your employer thinks it's necessary.**

- **We have now covered everything in 1910.132.**
  - The next regulation in the series fleshes out specific PPE requirements for one of the most crucial parts of human body... the face.

- **According to the Eye and Face Protection Standard (1910.133), you must use appropriate protective equipment around eye and face hazards.**
  - In many cases, this means using safety glasses.
  - Equipped with shatter-resistant lenses, these are necessary wherever flying particles can be found.

- **Although the lenses in safety glasses can defend you from frontal impacts, the sides of your eyes also need protection.**
  - This is done by using side shields.
  - Detachable, clip-on or slide-on side guards are permissible, provided that they meet with OSHA's approval.

- **If you work near intense light sources, such as welding torches, your safety glasses must have special optical filter lenses.**
  - These lenses all have "shade numbers" that indicate the types of light they defend against.
  - Shade numbers must always match the intensity of the light source.
  - Otherwise, the glasses will <u>not</u> provide adequate protection, and in worst case situations, blindness may occur.

- **Liquid chemical splashes require more protection than safety glasses can provide.**
  - In these cases, goggles are a necessity.
  - They must fit snugly, protecting the eye area from all angles.

- **Be careful if you need to wear goggles over prescription glasses. In this case, you must use eye protection that either:**
  - Incorporates the prescription into its design.
  - Can be worn over the lenses without disturbing the proper positions of the prescription lenses or the protective lenses.

- **If you wear contact lenses, ask about your company policies regarding them.**
  - Contacts may not be safe to wear in some areas.
  - In fact, certain chemicals can actually bond contact lenses to their wearers' eyes.

- **No matter what type of eye and face PPE you need, it must be distinctly marked so its manufacturer is easy to identify.**
  - These markings allow your employer to identify workers' eye protection at a glance.
  - If someone is not wearing the proper eyewear, they can be issued the necessary PPE before an accident occurs.
  - If a product recall occurs, the marks help to identify defective PPE so that it can be returned to the manufacturer.

- **Now that we've covered eye and face safety, let's look at the next regulation in the Personal Protective Equipment series (1910.134) which deals with respiratory protection.**

- **Some work environments contain airborne hazards, such as:**
  - Dust.
  - Mist.
  - Fumes.
  - Vapors.

- **To work safely in these areas, you will need a respirator. They come in three types:**
  - Disposable masks.
  - Air-Purifying Respirators (APRs).
  - Air-Supplying Respirators (ASRs).

- **Disposables are the simplest of the three.**
  - Made of fibers that trap airborne contaminants, these masks keep hazardous particles out of your nose and lungs.
  - Disposable masks are often used by painters and exterminators, because these workers are frequently in danger of inhaling droplets of industrial solvents or insecticides.

- **In some cases, however, chemicals are so strong or concentrated that disposable masks can not protect against them.**
  - In these situations, you need to use Air-Purifying Respirators (APRs).
  - APRs come in half-face and full-face models, and trap contaminants in disposable filter cartridges.
  - These filters capture gases and vapors through chemical means, before they can be inhaled.

- **Whenever you wear an APR, you must make absolutely sure that these cartridges are correct for the substance you're working with.**
  - Otherwise, the respirator will not provide adequate protection.

- **To make selection easy, filter cartridges are color-coded and identified with labels approved by the National Institute for Occupational Safety and Health (NIOSH).**
  - Ask your supervisor about which filters are required in your work area.

- **Keep in mind that wearing the wrong filter can be the same as wearing no filter at all.**
  - Always be sure that you have the proper protection against the hazards you will face.

- **As reliable as APRs are, there are still conditions that they cannot handle.**
  - For example, some atmospheres do not contain enough oxygen or are full of toxic gases.
  - In such environments, Air-Supplying Respirators (ASRs) must be used.
  - These provide clean air from pressurized tanks.

- **There are two types of ASRs:**
  - Self-Contained Breathing Apparatus (SCBAs).
  - Supplied-Air Respirators (SARs).

- **SCBAs use a portable air tank, which is strapped onto your back.**
  - SARs, on the other hand, supply air through a long hose, from a source located some distance away.

- **Each type of respirator has its own advantages and disadvantages.**
  - For example, moving around with an SCBA tank on your back is often easier than trailing a long SAR hose behind you.
  - The weakness of an SCBA, however, is that your air supply is restricted to the amount of air you can carry with you.

- **On the other hand, while SARs do restrict your movements more than SCBAs, they have their own advantages.**
  - Supplied-Air Respirators free you from having to lug around an air tank.

- **Since an assistant can switch your air tanks while you work, you can wear an SAR for a much longer time than you could an SCBA.**

- **No matter what kind of respirator you use, your safety department will periodically check you for a proper fit.**
  - This is called a "fit test."
  - If you aren't fit-tested, no one can be sure that your respirator is continuing to seal properly against your face.
  - Remember, even a tiny gap can let in contaminants.
  - You should always take fit tests seriously. They're for your protection.

- **So far, we have looked at PPE that protects your eyes, face and lungs. Next, we'll discuss how to protect your head.**
  - The regulation 29 CFR 1910.135 states that you must wear a protective "helmet" wherever there is danger from falling objects.
  - Today, this means wearing a hard hat.
  - Hard hats can protect you from falling or flying objects, chemical splashes and molten metal.
  - Anyone who works near exposed electrical wires that could touch their heads must wear a hard hat that is specifically designed to reduce electrical shock hazards.

- **Lightweight bump caps can be used to protect you in areas with low head clearances.**
  - Never use a bump cap as a substitute for a hard hat.
  - Bump caps don't provide the same level of protection.

- **No matter what their design, all protective helmets must comply with the American National Standards Institute (ANSI) regulations detailed in 1910.135.**

- **Since we have dealt with your eyes, face, lungs and head, it's time to travel to the opposite end of your body... your feet.**
  - This is the subject of our next PPE Standard... 1910.136, Occupational Foot Protection.

- **The average person takes 18,000 steps every day... each one a potential slip, trip or fall.**
  - On the job, you can prevent these accidents by wearing safety shoes with non-slip soles.
  - For best results, these must be designed for the particular surface you work on.

- **For example, soft rubber soles work well on dry surfaces, but may not provide adequate traction on wet or greasy surfaces.**
  - Hard rubber soles are ideal for greasy concrete or wood, but may be less effective when these same materials are wet.
  - Soles constructed of synthetic rubber or natural rubber compounds are safe on most surface conditions.

- **An important feature of safety shoes are their protective metal toe caps.**
  - These are a must around falling objects.
  - Metal plates within the soles of your shoes can help prevent punctures.

- **Safety shoes may also be insulated against:**
  - Heat.
  - Cold.
  - Electrical hazards.

- **No matter what your safety needs, make sure that your work shoes will fully protect you from the daily hazards you face.**
  - Ask your supervisor if you have any questions about foot safety in your workplace.

- **So far, the PPE Standards we have examined deal with protecting specific areas of your anatomy.**
  - Our next regulation is different, however.
  - It focuses on a hazard that can damage your entire body... electrocution.

- **Unlike the other regulations that we have looked at, 1910.137 goes beyond just Personal Protective Equipment.**

- **This regulation deals with all aspects of electric shock protection, including:**
  - Hoses containing electrical lines.
  - Mats of insulating material.

- **For the purposes of this course, however, we will only deal with the PPE covered in 1910.137... rubber gloves and sleeves.**

- **Any electrical PPE you wear must meet the following requirements:**
  - Gloves and sleeves must be produced by a seamless process (this prevents the rubber from tearing when you flex it).

- **Protective limitations, such as maximum voltages the equipment can be used with, must be clearly indicated on the PPE. These markings must not:**
  - Conduct electricity.
  - Interfere with the insulating qualities of the equipment.

- **And all electrical PPE must be able to withstand the A-C and D-C test voltages specified in the Standard.**
  - If it fails to pass these tests, you may not use it.

- **Selecting the right electrical PPE is only half of the battle, however.**
  - To stay safe, you must also take care of it.

- **That's why it is important to inspect your electrical PPE for flaws:**
  - At the beginning of each work day.
  - And immediately after any incident that could have damaged it.

- **Never use electrical Personal Protective Equipment with any of the following defects:**
  - Holes or tears.
  - Punctures or cuts.
  - Ozone cutting, also known as ozone checking (these are interlacing cuts or cracks caused by ozone exposure).
  - An embedded foreign object.
  - Texture changes (such as swelling, softening, hardening, or becoming sticky or inelastic).
  - Any other defect that might damage the PPE's insulating properties.

- **If your PPE is defective, it must be removed from service immediately and tested for insulating ability.**
  - If it's damaged beyond repair, the PPE must be discarded.

- **You can fix some electrical Personal Protective Equipment yourself, but PPE repairs must stand up to rigorous testing.**
  - For example, you may seal minor blemishes on gloves and sleeves with an suitable liquid compound.
  - Gloves may only be repaired in the area between the wrist and the reinforced edge of the opening, however.
  - Once repaired, your insulating equipment must be retested before you may use it.

- **You've seen that the Electrical Protective Devices regulation (1910.137) is quite different than the first five Standards we looked at.**

- **Next, we will once again deal with protecting a specific part of your body... a set of "built-in tools" that allows you to manipulate any device you will ever encounter.**
  - Of course, we are talking about your hands.

- **Your hands and fingers are valuable tools... the most valuable you'll ever own.**
  - So you need to protect them with gloves.

- **There are a wide variety of protective gloves available:**
  - Cloth gloves protect against minor physical hazards, like dirt, splinters and abrasions, and are good for light jobs, such as groundskeeping.
  - Leather and aluminized gloves protect against sparks and metal flakes, as well as moderate heat.
  - Metal mesh gloves shield your hands from materials with sharp edges.
  - Rubber gloves help protect your hands against acid splashes and electric shock.
  - Plastic gloves shield your hands from corrosive materials.

- **Other gloves offer protection from health hazards.**
  - For example, disposable latex gloves protect you against blood and other body substances.

- **Some jobs may require more specialized hand protection.**
  - Arm and wrist guards, tapes, finger shields and hand pads can save you from cuts, bruises and soreness.

- **No matter what hand PPE you wear, make sure that it fits correctly.**
  - If it is too loose, it can snag in machinery, or make handling small objects difficult.
  - If it is too tight, it can cut off your circulation.
  - Ask your supervisor for help in finding the right hand protection for the job you do.

- **As you have seen, the seven PPE Standards make up a diverse group. Still, all of these regulations do have important things in common.**

*** * *SUMMARY* * ***

- **Your employer must evaluate your workplace, to determine if it is hazardous.**

- **If your worksite is hazardous, your employer must provide you with appropriate PPE, suitable to the work you're doing.**

- **All Personal Protective Equipment must be maintained in a sanitary and reliable condition.**

- **Your employer must train you how to use your Personal Protective Equipment... and you must demonstrate that you know how to handle your PPE before you are allowed to use it on the job.**

- **After your initial PPE training, you may also be retrained whenever your employer thinks it's necessary.**

- **Some people have jobs that are exceptionally safe.**
  - They seldom have to worry about getting injured at work.
  - But doing your job requires protection. Not having it can mean disability... even death.

- **So play it safe. Find out what Personal Protective Equipment you need for the job, learn everything that you can about it, and use it... <u>every day</u>!**