29 CFR 1910.95(k) Hearing Protection

Hearing and Noise

Preparation

1. Read Applicable Background information and related Company Policy Chapter.
2. Make _____ Copies of this Lesson Plan for Personnel
3. Make Transparency, procure transparency pens, etc.
4. Coffee, tea, snacks

Other:

Material

1. Personal Protective Equipment for Hearing
2.
3.

Objective

By the end of this session, personnel shall be able to:

- Discuss employee responsibilities regarding wearing hearing protective devices
- Discuss the identification of hazardous noise areas
- Discuss Company noise control methods to include:
  - Engineering Controls
  - Personal Protective Equipment
- Describe the proper use and maintenance of hearing protective devices

Background

Evidence is well established that worker exposure to noise of sufficient intensity and duration can result in hearing damage. Noise-induced hearing loss rarely results from just one exposure; it can progress unnoticed over a period of years. Initial noise-induced hearing loss occurs at the higher frequencies where the consonant portion of speech is found, making communications difficult.

It is the policy of the Company to provide employees with a safe and healthful working environment. This is accomplished by utilizing facilities and equipment that have all feasible safeguards incorporated into their design. When effective engineering controls are not feasible, or when they are being initiated, administrative controls will be used when and where possible followed by the use of personal protective equipment.

Notes

Lesson

Notes

Employee Responsibilities

Employees are responsible for wearing and maintaining hearing protective devices as instructed. Employees exposed to excessive levels of noise must also participate in annual training programs and the medical surveillance program which includes audiometric testing.

Identification of Hazardous Noise Areas

The Safety and Health Manager will identify work areas within Company facilities where noise levels equal or exceed 80 dBA. Records shall be maintained by the Safety and Health Manager and updated at least every two years to determine if any alteration in noise levels has occurred. Those areas where the noise levels are below 80 dBA will not be routinely monitored. Identification of hazardous noise areas and equipment and any subsequent noise monitoring will be conducted by the Safety and Health Manager.

Signs will be posted at the entrance to any work area where noise levels exceed 80 dBA, requiring anyone entering the area to wear proper hearing protection. Personnel who work in these areas shall have hearing protection supplied to them, shall be instructed in its proper use, and be required to wear this equipment when in these identified areas. It is the responsibility of the area supervisor to ensure that these precautions are maintained.

Equipment which produces noise levels greater than 80 dBA, or 120 dB peak sound pressure levels shall also be appropriately labeled.

Noise Control Methods

Engineering and Administrative Controls

The primary means of reducing or eliminating personnel exposure to hazardous noise is through the application of engineering controls. Engineering controls are defined as any modification or replacement of equipment, or related physical change at the noise source or along the transmission path that reduces the noise level at the employee's ear. Engineering controls such as mufflers on heavy equipment exhausts or on air release valves are required where possible.

Administrative controls are defined as changes in the work schedule or operations which reduce noise exposure. If engineering solutions cannot reduce the noise, administrative controls such as increasing the distance between the noise source and the worker or rotation of jobs between workers in the high noise area should be used if possible.

The use of engineering and administrative controls should reduce noise exposure to the point where the hazard to hearing is eliminated or at least more manageable.

Personnel Monitoring

Determination of the noise exposure level will be accomplished using calibrated noise dosimeters. Each employee to be monitored will have a dosimeter placed on him/her at the beginning of his/her normal work shift with the microphone placed in the "hearing zone". The dosimeter will be worn for the full duration of the work shift while the employee performs his/her normal work routine. At the end of the work shift, the dosimeter will be removed and information printed out as soon as possible. Background information will be collected from each employee detailing job description, unusual job activities, etc., for the time period sampled. Those employees whose noise exposure equals or exceeds 80 dBA on an 8-hour TWA (Time-Weighted Average) will be referred to the Safety and Health Manager for inclusion in the Hearing Conservation Medical Surveillance Program.

Personal Protective Equipment

Hearing protective devices (ear plugs, muffs, etc.) shall be the permanent solution only when engineering or administrative controls are considered to be infeasible or cost prohibitive. Hearing protective devices are defined as any device that can be worn to reduce the level of sound entering the ear. Hearing protective devices shall be worn by all personnel when they must enter or work in an area where the operations generate noise levels of:

- Greater than 80 dBA sound levels, or
- 120 dB peak sound pressure level or greater

Notes

Types of Hearing Protective Devices Hearing protective devices include the following:

Insert Type Earplugs

A device designed to provide an air-tight seal with the ear canal. There are three types of insert earplugs – premolded, formable, and custom earplugs.

1. Premolded Earplugs

Premolded earplugs are pliable devices of fixed proportions. Two standard styles, single flange and triple flange, come in various sizes, and will fit most people. Personnel responsible for fitting and dispensing earplugs will train users on proper insertion, wear, and care. While premolded earplugs are reusable, they may deteriorate and should be replaced periodically.

2. Formable

Formable earplugs come in just one size. Some are made of material which, after being compressed and inserted, expands to form a seal in the ear canal. When properly inserted, they provide noise attenuation values that are similar to those from correctly fitted premolded earplugs. Individual units may procure approved formable earplugs. Supervisors must instruct users in the proper use of these earplugs as part of the annual education program. Each earplug must be held in place while it expands enough to remain firmly seated. A set of earplugs with a cord attached is available. These earplugs may be washed and therefore are reusable, but will have to be replaced after two or three weeks or when they no longer form an airtight seal when properly inserted.

3.Custom Molded Earplugs

A small percentage of the population cannot be fitted with standard premolded or formable earplugs. Custom earplugs can be made to fit the exact size and shape of the individual's ear canal. Individuals needing custom earplugs will be referred to an audiologist.

Earmuffs

Earmuffs are devices worn around the ear to reduce the level of noise that reaches the ear. Their effectiveness depends on an air tight seal between the cushion and the head.

Notes

Selection of Hearing Protective Devices

Employees will be given the opportunity to select hearing protective devices from a variety of suitable ones provided by the Office of Health and Safety. In all cases the chosen hearing protectors shall have a Noise Reduction Ratio (NRR) high enough to reduce the noise at the ear drum to 80 dBA or lower.

Issuance of Hearing Protective Devices

The issuance of hearing protective devices is handled through the Safety and Health Manager. The Safety and Health Manager will issue and fit the initial hearing protective devices (foam inserts, disposables). Instruction on the proper use and care of earplugs and earmuffs will be provided whenever HPDs (hearing protective devices) are dispensed. Personnel requiring earmuffs in addition to earplugs will be informed of this requirement and educated on the importance of using proper hearing protection. The Safety and Health Manager will dispense ear muffs when necessary and will maintain a supply of disposable earplugs.

Use and Care of Hearing Protective Devices

a. Always use and maintain HPDs as originally intended and in accordance with instructions provided.
b. Earmuff performance may be degraded by anything that compromises the cushion-to-circumaural flesh seal. This includes other pieces of personal protective equipment such as eyewear, masks, faceshields, and helmets.

Maintenance of Hearing Protective Devices

a. Reusable earplugs, such as the triple flange or formable devices should be washed in lukewarm water using hand soap, rinsed in clean water, and dried thoroughly before use. Wet or damp earplugs should not be placed in their containers. Cleaning should be done as needed.
b. Earmuff cushions should be kept clean. The plastic or foam cushions may be cleaned in the same way as earplugs, but the inside of the muff should not get wet. When not n use, ear muffs should be placed in open air to allow moisture that may have been absorbed into the cups to evaporate.

Notes

Hearing Protection Performance Information

The maximum of sound attenuation one gets when wearing hearing protection devices is limited by human body and bone conduction mechanisms. Even though a particular device may provide outstanding values of noise attenuation the actual noise reductions may be less because of the noise surrounding the head and body bypasses the hearing protector and is transmitted through tissue and bone pathways to the inner ear.

The term “double hearing protection” is misleading. The attenuation provided from any combination earplug and earmuff is not equal to the sum of their individual attenuation values.

Closure

What causes hearing loss?

We all experience a decrease in hearing with aging. But hearing loss can be accellerated under the following conditions:

- Exposure to noise from machinery
- Tractors, grinders, augers, and other machinery
- Noise from lawn mowers and chain saws
- Episodic, very load sounds such as those generated by guns
- Listening to loud music
- Head injuries
- Ear canal obstructions
- Exposure to toxic medicine and chemicals

Hearing aids can improve the hearing of those suffering from noise induced hearing loss. However, preventing the problem is the best approach to take.

What questions do you have?

Notes