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Noise

Introduction

Noise is not a new hazard. It has been a constant threat since the industrial revolution. Too much noise exposure may cause a temporary change in hearing or a temporary ringing in your ears. These short-term problems usually go away within a few minutes or hours after leaving the noise. However, repeated exposures to loud noise can lead to permanent, incurable hearing loss or tinnitus.

It is important to have a complete understanding of the auditory hazards present on your operation. Auditory hazards are anything that a worker may be exposed to that result in unsafe and harmful conditions within the pork production environment. While exposure to auditory hazards can result in mild to severe consequences for agricultural workers, the goal should always be to prevent them completely, or at the very least minimize their effects. Unfortunately, hearing damage could be irreversible and depending on the intensity, duration, and frequency of exposure could also be untreatable.

On swine farms, noise levels may easily exceed 95 decibels during feeding time and bleeding of hogs. Noise levels up to 110-115 decibels have been recorded. The OSHA limit in general industry for noise exposure is 90 decibels over an eight hour work shift. Hazardous noise exposure in pork operations can also occur during blood collection, breeding, feeding, processing pigs, running large machinery, and power washing.

OSHA's Hearing Conservation Amendment CFR 1910.95: A Brief Overview

Do I Need a Hearing Conservation Program?

If you have asked yourself this question, the answer is probably yes! OSHA requires an "effective, on-going hearing conservation program" if sound levels on your operation are at or above an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with appendix A and Table G-16a without regard to any attention provided by the use of personal protective equipment.

According to Safe Farm at Iowa State University, you may also want to consider a program and hearing protective devices if:

- You or your employees experience "ringing" in the ears after being in a noisy area;
- You or your employees are bothered, nervous, or anxious after being in a noisy area;
- You or your employees want to increase your comfort;

- You or your employees are unusually fatigued after working in a noisy area, or
- A doctor recommends one.

Compliance with CFR 1910.95, the federal Hearing Conservation Amendment, involves but is not limited to, the following steps:

1. **Assess Risk of Exposure** – Noise exposure monitoring, or noise measurement, is required to determine which workers are at risk for excessive exposure to noise. Monitoring shall be repeated whenever there is a change in production, process, equipment or controls that increases noise exposure.
2. **Test Hearing** – Each worker in the Hearing Conservation Program (HCP) must get an original audiogram, called a baseline, within six months of starting work in a HCP area to determine how well he/she hears before he or she is exposed to noise by this employer.
3. **Hearing Protection** – Employers shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to employees. It's the employer's responsibility to make sure that Hearing Protective Devices are used appropriately.
4. **Training and Education** – Workers in the HCP receive annual training on the effects of noise on hearing, aspects of Hearing Protective Device use (including purpose, use, care, applicability, advantages, selection, fitting, and noise reduction values), the purpose for testing hearing, and explanation of the testing procedure. Training also allows workers to ask any questions they have about noise and hearing.
5. **Noise Controls** – The Hearing Conservation Amendment requires the implementation of feasible engineering and/or administrative controls, as well as mandatory hearing protection, where exposures exceed a time weighted average of 90 dBA. Efforts should focus on feasible engineering controls to reduce exposure to noise.

(SOURCE: information for this section was obtained from the National Hearing Conservation Association's Guide #4: A Practical Guide to Complying with OSHA's Hearing Conservation Amendment CFR 1910.95 http://www.hearingconservation.org/docs/Prac_Guide4.pdf and the Council for Accreditation in Occupational Hearing Conservation – CAOHC – Spring 1998 Update).

Please Note: This information does not constitute an exhaustive explanation of how to implement a Hearing Conservation Program, but is meant to be an overview. Please consult an expert to assist you in setting an OSHA regulated program. See the ADDITIONAL RESOURCES section at the end of this section for more information.

Hazard

Challenge: Your employees may be exposed to hazardous noise levels each day. They may believe that because they have become accustomed to a noise and it doesn't seem to bother them they do not need hearing protection.

Solution: Educate employees about auditory hazards and the effects of hearing loss. Explain that just because a noise does not bother them, it does not mean that damage is not occurring. Often the progression of hearing loss takes time and the signs of loss go undetected until the damage is severe. Provide employees training on auditory safety and prevention and make available personal protective equipment, such as earplugs or muffs. Make sure the employees are trained on their proper usage.

Challenge: Noise induced hearing loss is usually a gradual, difficult to detect injury. How can I tell if an employee has suffered from hearing loss?

Solution: Three tests can be conducted:

1. Noise surveys: Hazardous levels of noise can be detected by a trained professional using sound level meters. Avoid excessive noise levels for 14 hours before the test;

2. Hearing tests: A local medical facility can perform a hearing test;
3. Self tests: Listen. If a ringing or buzzing sound is present after working with noisy equipment, over-exposure to noise has probably occurred. (Source: Institute of Agricultural Medicine and Occupational Health).

Remember: Impress upon your employees the critical importance of adherence to an auditory health and safety program for the preservation of their hearing. Provide the appropriate PPE, as well as training.

Identify the Hazard Zones

The first step toward auditory health and safety is to identify the source or cause of a hazard. A hazard zone for hearing occurs during any phase of production when noise levels are at or above 85 decibels. To accurately identify the hazard zones on your operation, measure decibel levels at different times and at different locations on your farm. How quickly hearing loss takes place depends on the intensity of the noise, its duration, and how often the exposure occurs.

How can employers determine if employees are in a hazard zone?

Have employees follow this simple rule: If you have to shout to be heard by someone three feet from you, you are probably in a hazard zone (the noise is probably greater than 85 dB) and need to wear hearing protection to prevent damage. If sounds seem muffled or softer after noise exposure or you are experiencing a ringing, buzzing or whistling in your ear, you have probably damaged hearing ability. Repeated exposure can result in permanent, untreatable hearing damage.

Common examples of hazard zone areas in pork operations are during:

- blood collection
- breeding
- feeding
- processing pigs
- running large machinery
- power washing

Remember: You can't prevent hazardous noise exposure if you don't know when and where in your operation noise levels are dangerous...KNOWING THE SOURCE or CAUSE is first step toward hearing safety.

Prevention & Control

Now that you have identified the sources or causes of potentially hazardous exposures for hearing, work toward understanding the basic steps in prevention and then consistently apply the preventive steps. Set an example with your employees for hearing health and safety through common sense prevention. While it is never too late to put safe hearing steps into place on your operation, the time for implementation of these steps is before damage occurs, rather than after. The goal should be to reduce or completely eliminate the hazard. However, if you are still at risk, preventive measures must be properly implemented for protection. The chart below will help you identify how long you can be exposed to a certain level of noise (measured in decibels or dB) before damage occurs.

How can I reduce the level of noise on my operation?

- Reduce the noise at the source. For example, noise reduction of a power washer could occur by placing the motor in another room or outside.
- If possible, remove yourself and employees from a hazard zone during the times and situations when noise levels are excessive.
- Achieve noise filtration by properly wearing hearing personal protective equipment such as ear-plugs or earmuffs.

Remember: Preventing hazardous noise exposure relies on you and our employees taking proactive, rather than reactive measures toward health and safety.

Summary

Agricultural workers tend to have greater hearing loss than people in many other occupations. Therefore they should learn to identify the noise levels that could damage hearing. If noise levels are high, use some form of hearing protection when you're working in a noisy environment.

DO:

- Wear properly fitted hearing protection for all noisy jobs.
- Stay as far away from the source of the noise as possible.

DON'T:

- Refuse to wear hearing protection because you find it uncomfortable.
- Ignore any signs that your hearing has deteriorated.
- Remain in a noisy area for an extended period of time.

Additional Resources

Noise and Hearing Loss Prevention (NIOSH). Includes sections on how to choose a hearing protection device, a link to the hearing protection compendium (searchable to find HPDs by criteria), a searchable database of power tool noise emissions, and more. (<http://www.cdc.gov/niosh/topics/noise/>)

OSHA Occupational Noise Exposure Standard. (http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9735&p_table=STANDARDS%20)

OSHA Occupational Noise Exposure Standard and Interpretations. (http://www.osha.gov/pls/oshaweb/owaquery.query_docs?src_doc_type=INTERPRETATIONS&src_anchor_name=1910.95&src_ex_doc_type=STANDARDS&src_unique_file=1910_0095%20)

Hearing conservation checklist for employers (CDC) (<http://www.cdc.gov/niosh/topics/noise/workplacesolutions/hearingchecklist.html>)

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