ZeraWare Safety Meeting Guide

HEARING CONSERVATION

1. Hearing conservation means conserving or saving your hearing. Your hearing can be damaged by exposure to loud noise. The louder the noise and the longer the exposure; the greater the risk of a hearing loss.

2. Noise is sound waves that travel through the air. These waves of energy are picked up by our outer ear and directed to our ear drum.
   - Sound causes the ear drums to vibrate.
   - That vibration is transmitted through three small bones in the middle ear, to the inner ear.
   - The inner ear consists of fluid and thousands of thin strands of tissue that transmits the sound to the brain through the auditory nerve.
   - The brain identifies the sound.

3. Exposure to loud noise levels can damage parts of ear. The most serious damage occurs to the inner ear. Inner ear damage is a permanent hearing loss. High frequency sounds are more damaging.

4. Hearing loss occurs to everyone as they get older. It's a normal aging process. Normally that occurs at an older age. Exposure to loud noise too often or for too long, produces a greater hearing loss at an earlier age.

5. Some people will suffer a ringing or hissing in the ear after one exposure to very loud noise. This is usually temporary and the ringing stops after awhile.

6. But repeated exposure to loud noise can produce permanent damage to the inner ear and a constant hissing or ringing sound in the ear (the medical term is “tinnitus”).

7. Noise induced hearing loss does not happen suddenly. It occurs gradually over time: usually years. That's why so many people don't realize that they are losing their hearing: it's very subtle. And the damage is irreversible: it can't be fixed.

8. But hearing loss from loud noise can be prevented; by practicing Hearing Conservation. Simply take precautions to protect your hearing BEFORE you start suffering a hearing loss.

9. We know that loud noise damages hearing. But what is loud? Noise is measured in decibels.

   - 0 decibels - no noise
   - 20 decibels - extremely quiet room
   - 60 decibels - normal speech
   - 80 decibels - machinery, loud conversation, shouting is necessary.
   - 90 decibels - the maximum noise exposure for a full day of work - OSHA standard.
   - 100 decibels - extremely loud - it's difficult to talk even if close. Power sander, grinder.
   - 120 decibels - noise level is so loud it's physically uncomfortable - beginning of pain.

10. In the workplace, a daily noise level over 85 decibels will cause hearing loss to some people. Noise levels over 90 will cause hearing loss to most people. Anyone exposed to a full day of noise levels over 85 decibels should wear hearing protection. A full day of exposure to 90 decibels or more requires hearing protection. *(What are the noise levels here?)*

11. To Prevent Hearing Loss:

    a. Wear hearing protection when exposed to loud noise. *(Where is hearing protection required here?)*
    b. All hearing protection has an N.R.R. Number (noise reduction rating). The higher the number, the better the hearing protection. It doesn't matter if its an ear plug or muff.
    c. Two kinds of hearing protection should be available. If one isn't comfortable for you, try the other. *(how or where can employees get hearing protection?)*
    d. Hearing protectors are made of acoustical material that block or absorb sound waves from hitting your ear drum. Other material like cotton or cloth are not substitutes for proper hearing protectors.
    e. Proper fit is important. The ear plug should be snug in the ear canal to be effective. A loose ear plug will allow damaging levels of noise to reach your ear drum.

12. Hearing Tests:

    a. Audiometric Tests measure your hearing ability at different frequencies - one ear at a time.
    b. Future hearing tests compare your current hearing ability with your first test to see if there has been a loss.
    c. If a hearing loss is detected:
        1) You need to protect your hearing better. Wear hearing protection more often or choose a better ear plug. Some people double-up and wear ear plugs inside muffs.
        2) You should be examined by your doctor or an ear specialist as well.

13. Any questions?