

Hearing Conservation Program

I. Purpose:

This policy is designed to formalize a process for personnel to protect their sense of hearing in an environment that can produce loud noises. Hearing loss from workplace noise exposure is addressed in this policy. Other forms of hearing loss can result from illness, use of medications, individual medical history, and exposure to chemicals to name a few, which are not addressed by this policy.

II. Scope:

This policy pertains to all personnel who are subject to loud noises during the normal course of duty.

III. General Considerations:

- A. Fire departments use a variety of vehicles, power equipment, and tools that can produce high decibel levels that are found to be potentially injurious to the auditory sense of the operator and persons in the vicinity of the equipment. Standards such as 29 CFR 1910.95; CCR, Title 8, Section 5097; National Fire Protection Association (NFPA) Standard 1500, and other required or recommended sources have identified processes and means to reduce the potential for auditory damage to workers.
- B. Foremost, hearing loss is a preventable disease, and individuals must comply with the safety program to receive the benefits of the preventative measures.
- C. Noise Induced Hearing Loss (NIHL) not only causes auditory effects, but can also be accompanied by extra-auditory effects (psychological problems or short or long term physiological effects).

IV. Exposure:

- A. An exposure to high noise levels can occur in the course of working around fire, EMS, rescue, and other fire department operations.
- B. Three major factors are to be considered when evaluating sound and noise levels:
 - 1. Intensity: the loudness/softness of the sound.

2. Frequency: measured in decibels (dB) with zero being the weakest sound that a person can hear and 140 being the threshold of pain. A 6 dB increase will double the intensity of the sound, i.e. 66 dB is twice as intense as a 60 dB.
 3. Duration: the sound exposure over time.
- C. A combination of noise intensity dB, and the time of exposure, will change as the noise intensity increases, and require the use of hearing protection. A Permissible Exposure Limit (PEL) for a sound level of 105 dB is one hour. An emergency response with siren in an open fire engine cab or jumpseat can have a 116 dB, which is permissible for 0.25 hours. Seating positions on a fire engine can have different dB levels.

V. Identification of Work Situations:

- A. The following situations represent geographical and movable work locations and include but are not limited to:
- Riding on fire apparatus with and without Code 3 siren use.
 - Working around aircraft such as an airport, helipad, and helispot.
 - Training activities, weekly equipment check, and other activities in which extrication equipment, pumps, and other equipment is operating.
 - Working around non fire department power equipment such as construction tools and equipment.
 - Power equipment, operated during weekly inspection or test/repairs, shall be operated well outside of the fire station to the extent possible.
 - Vehicles, operated during daily inspections, after repairs/maintenance, and other activities shall be operated well outside of the fire station to the extent possible.

VI. Identification of Equipment:

- A. Hearing protection shall be worn when operating equipment creating an 85 dB level or greater unless wearing such equipment poses a potential injury to the employee. Identified equipment that produces an 85 dB includes but is not limited to the items below:

1. Extrication equipment
2. Gasoline powered saws
3. Apparatus fire pumps
4. Power tools
5. Using hand tools such as a hammer, axes, etc., where the repeated striking sound provides a loud report.
6. Fire station SCBA compressor.
7. Vehicle back-up alarms.

B. **EXCEPTION:** Wearing hearing protection during emergency operations may not be practical and is not required under this section. However, and when practical, personnel operating at emergency scenes should consider wearing hearing protection in an effort to prevent possible hearing loss due to loud noises generated at an emergency incident.

VII. **General Prevention Guidelines:**

- A. Preventative measures are cited but are not limited to:
1. Purchasing fire apparatus with sound attenuating insulation built in.
 2. Selecting equipment purchases based upon noise issues.
 3. Requiring the air horns, siren speakers, and similar warning devices be mounted under or recessed into the bumper and not attached to the passenger cab.
 4. Providing hearing protection devices for personnel potentially exposed to noise environments.
 5. Designing facilities such that sound-attenuating insulation is built in and powered equipment is located in sound isolated areas.
 6. Provide new employees with base line auditory evaluation and annual examinations for all uniformed personnel.
 7. Power equipment and vehicles are to be run outside of the fire station to the extent possible unless all persons in the work area are wearing

hearing protection.

8. Responses with sirens and air horns should be accomplished with the windows rolled up.

VIII. Hearing Protection:

- A. Being identified as work areas that are likely to produce noise levels that exceed 85 decibels, ear protection will be provided, available, and worn by personnel when sound levels exceed 85 decibels in the following areas:
 1. The Hose Storage Room when the SCBA compressor is operating.
 2. The Apparatus Floor when back-up alarms are sounding or when fire apparatus is running.
 3. The Apparatus Floor Shop when power equipment is being operated.
 4. Near fire apparatus outside when operating at high idle.
- B. Personal Hearing Protection:
 1. Personal Hearing Protection in the form of earplugs will be issued to, and made available to all personnel.
 2. Personal Hearing Protection in the form of earplugs shall be worn by personnel when the wearing of standard ear protection such as "ear muffs" is not practical.
 3. Personal Hearing Protection such as earplugs shall be worn by personnel in situations that are likely to cause noise levels exceeding 85 decibels not otherwise identified in this policy.

IX. Noise Level Monitoring:

- A. The fire department shall maintain a Noise Level Monitor and the monitor shall be made available personnel to check noise levels as needed.
- B. The Noise Level Monitor shall be calibrated annually to the manufacturer's specifications.

X. Audiometric Testing:

- A. Annual audiometric testing of all employees shall be performed during the annual medical examination.
- B. All new employees shall be given an initial baseline audiometric exam, which is performed during the pre-employment physical for new employees.
- C. Employees should be reminded to avoid exposure to loud levels of noise for at least 14 hours prior to the audiometric exam. If the employee believes that exposure to noise is unavoidable for this 14-hour period, he/she shall be instructed to wear hearing protection while exposed to noise.
- D. A 10 dB increase in the average of 2,000; 3,000; & 4,000 Hz from baseline or greater meets OSHA criteria for STS (Standard Threshold Shift). A STS change \geq 10 dB should have follow up testing/evaluation.