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OPERATIONS MANUAL

STANDARD INSTRUCTION 10 INJURY ILLNESS AND PREVENTIION PROGRAM

SECTION 27 HEARING PROTECTION

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<b>TITLE</b> O P E R A T I O N S   M A N U A L	<b>STANDARD</b> <b>INSTRUCTION</b> 10		<b>DEPARTMENT</b> F I R E - R E S C U E
<b>SUBJECT:</b> INJURY AND ILLNESS PREVENTION PROGRAM HEARING PROTECTION	<b>SECTION</b> 27	<b>PAGE</b> 2 of 5	<b>EFFECTIVE DATE</b> 3/08/2023

**I.     PURPOSE**

The purpose of this policy is to maintain a Hearing Conservation Program in compliance with California Occupational Safety and Health Administration (CAL-OSHA) Subchapter 7 – *General Industry Safety Orders, Group 15 – Occupational Noise, Article 105 Control of Noise Exposure, Sections 5095 – 5100 and NFPA 1500* to ensure the prevention of occupational hearing loss.

**II.    SCOPE**

This policy shall apply to all San Diego Fire-Rescue Department (SDFD) personnel.

**III.   AUTHORITY**

The Fire Chief authorizes the information within this policy.

**IV.    DEFINITIONS**

- A.     **Attenuation** – The estimated sound protection provided by hearing protective devices as worn in “real-world” environments.
- B.     **Audiogram** – A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.
- C.     **Audiologist** – A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech, Hearing and Language Association or licensed by a state board of examiners.
- D.     **Baseline Audiogram** – The audiogram against which future audiograms are compared.
- E.     **Decibel (dB)** – Unit of measurement of sound level.
- F.     **dBA (Decibels-A-Weighted)** – A unit of measurement of sound level corrected to the A-weighted scale, as defined in ANSI S1.4-1971 (R1976), using a reference level of 20 micropascals (0.00002 Newton per square meter).
- G.     **Hertz (Hz)** – Unit of measurement of frequency, numerically equal to cycles per second.
- H.     **Sound Level** – Ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this regulation, SLOW time response, in accordance with ANSI S1.4-1971 (R1976), is required.
- I.     **Sound Level Meter** – An instrument for the measurement of sound level.

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V. **POLICY**

- A. The permissible exposure level for this Hearing Conservation Program (HCP) is not to exceed an 8-hour Time-Weighted Average (TWA) sound level of 85 decibels measured on the A-scale (slow response) or equivalently, a dose of 50%. This scale is often referred to as 85 decibels A-weighted (85 dBA).
- B. For purposes of the HCP, employee noise exposures shall be computed in accordance with the OSHA Standard, Appendix A and Table A-1 and without regard to any attenuation provided by the use of personal protective equipment. All continuous, intermittent and impulsive sound levels from 80 dB to 130 dB shall be integrated into the computation.
- C. All employees exposed at or above 85 dBA over an 8-hour TWA period, or equivalently, a dose of 50% are required to wear hearing protection. All employees exposed to noise levels at or above these levels must participate in the HCP.

D. **General Guidelines**

1. Identification of Exposure

- a. This program applies to all SDFD personnel who may be exposed to noise levels at or above 85 dBA in an 8-hour TWA.
- b. Excessive decibel producing equipment (>85 dB) can be identified through monitoring or sampling equipment. Examples include but are not limited: saws, hydraulic and gas power generators, ventilation systems and fans, air compressors, and striking tools. Equipment items identified should prompt personnel to don hearing protection when in close proximity or utilizing the equipment.
- c. Additionally, there are excessive decibel producing activities listed below that should be considered to don hearing protection:

1)	Ambulance backing alarm	95	dB
2)	Fire pump throttled up to 150psi	97	dB
3)	Apparatus backing alarm	101	dB
4)	Apparatus air horn from 20 feet away	106	dB
5)	Apparatus siren from 20 feet away	109	dB
6)	Apparatus growler from 20 feet away	114	dB

- d. Hearing loss is irreversible. Police yourself and each other to preserve the hearing you have and protect yourself from further hearing loss.

2. Monitoring

- a. OSHA requires employers to monitor noise exposure levels in a manner that will accurately identify employees who are exposed to noise at or above 82 dB averaged over 8 working hours, or an 8-hour TWA.

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- b. The exposure measurement must include all continuous, intermittent and impulsive noise within an 80 dB – 130 dB range and must be representative of a typical work situation.
  - c. Monitoring should be repeated when changes in production, process or controls increase noise exposure. Such changes may mean that additional employee monitoring is needed and/or previously supplied hearing protection no longer provides adequate attenuation.
  - d. Properly trained personnel should evaluate noise exposures in work areas including fireground operating areas.
  - e. Employees are entitled to observe the testing and monitoring procedures and must receive notification of the results of the tests in their workplace.
3. Hearing Protection
- a. Hearing protectors must be made available to all workers exposed to 8-hour TWA noise levels of 82 dBA or above.
  - b. Types of hearing protectors selected for employee protection must attenuate the noise to levels less than 85 dBA.
  - c. Where equipment operators are required to maintain radio communications while operating equipment, headsets that provide noise attenuation as well as radio communications/intercom shall be provided and used.
  - d. The wearing of hearing protection devices by employees will be mandatory under the following conditions:
    - 1) Wearing the hearing protection device does not create an additional hazard to the user.
    - 2) Employees who are exposed to average noise levels at an 8-hour time weighted average of 85 dBA or above.
    - 3) Employees who have not had a baseline audiogram and are exposed to 8-hour average noise levels of 85 dBA or above.
4. Audiometric Testing
- a. Annual audiometric testing of all employees exposed to 8-hour time weighted-average noise of 82 dBA or above is required.
  - b. All new employees shall be given an initial baseline audiometric exam, which is performed during the pre-employment physical for new employees.

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- 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. Employee testing environments and equipment shall be used in compliance with OSHA 29 CFR 1910.95.
- 5. Training and Education
  - a. Fire Department employees exposed to an 8-hour time-weighted average noise of 85 dBA and above shall be trained annually in the effects of noise, the purpose of hearing protectors, the advantages and disadvantages of the various types of hearing protectors, the selection, fitting and care of protectors, the purpose of audiometric testing, and an explanation of the test procedures.
- 6. Recordkeeping
  - a. Noise exposure measurement records shall be retained for five years.
  - b. Employees with standard threshold shifts (STS) (25 dB shifts in hearing acuity) averaged over the frequencies at 2000, 3000 and 4000 hertz in either ear will be considered to have an OSHA reportable injury.
    - 1) This injury shall be included on the OSHA 300 Log of Injury or Illness.
    - 2) STSs will be determined by annual audiometric testing.
  - c. Effective January 1, 2004, employees with standard threshold shifts – STS – (10 dB shifts in hearing acuity) averaged over the frequencies at 2000, 3000 and 4000 hertz in either ear which results in a total 25 dB level of hearing above audiometric zero will be considered to have an OSHA reportable injury which must be recorded on the OSHA 300 Log by checking the “hearing loss” column.
  - d. Records of audiometric test results shall be maintained by the employer for the duration of employment of the affected employee plus 30 years.
  - e. Audiometric test records must include the name and job classification of the employee, the date of the test, the name of the examiner, the date of acoustic calibration of the testing equipment, background sound pressure levels in the audiometric test room, and the employee’s most recent noise exposure measurements.
  - f. Records of annual training shall be maintained by the employer.