

 CITY OF TUCSON	City of Tucson	Page 1 of 9
	Central Safety Services	
	Number: H-007	Effective Date:
	Subject:	January 1, 1997
	Hearing Conservation Program	Reviewed/ Revised: January 1, 2013

1.0 PURPOSE

To establish policies and procedures designed to control employee exposure to occupational noise.

2.0 SCOPE

All departments that have employees who work in areas where noise levels equal or exceed an eight hour time-weighted average (TWA) of 85 dBA, or employees who are exposed to impact noise of 140 dBA, shall implement a Hearing Conservation Program.

The policies and procedures contained in this section are intended to assist in identifying and complying with OSHA Safety Standards. In all cases where there is a difference between specific OSHA standards and the Hearing Conservation policies set forth in this chapter, the stricter of the two shall apply.

3.0 DEFINITIONS

Action level: An 8-hour time-weighted average of 85 decibels measured on the A-scale, slow response, or equivalently, a dose of fifty percent (50%).

- 10-hour shift = 83dBA
- 12-hour shift = 82dBA

Audiogram: A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Audiologist: A professional, specializing in the study and rehabilitation of hearing who is certified by the American Speech-Language-Hearing Association or licensed by a state board of examiners.

Baseline audiogram: The audiogram against which future audiograms are compared.

Criterion sound level: A sound level of 90 decibels.

Decibel (dB): Unit of measurement of sound level.

Hearing Conservation Program Administrator: A person assigned by the Department Director to administer the Hearing Conservation Program for the department. The HCPA may be the Department Safety Officer.

Subject: Hearing Conservation Program	Number: IH-003	Rev. January 1, 2013	Effective Date: January 1, 1997	Page 2 of 9
--	-------------------	-------------------------	------------------------------------	----------------

Hertz (Hz): Unit of measurement of frequency, numerically equal to cycles per second.

Medical pathology: A disorder or disease. For purpose of this regulation, a condition or disease affecting the ear, which should be treated by a physician specialist.

Noise dose: The time-weighted average noise exposure expressed as a percentage of the permissible exposure limit. A dose of 100% equals and 8-hour time-weighted average of 90 dBA.

Noise dosimeter: An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

Otolaryngologist: A physician specializing in diagnosis and treatment of disorders of the ear, nose and throat.

Representative exposure: Measurements of an employee's noise dose or 8-hour time weighted average sound level that the employers deem to be representative of the exposure of other employees in the workplace.

Sound level: The intensity of sound as measured by an instrument and reported in decibels.

Sound level meter: An instrument for the measurement of sound level. Time weighted average sound level - That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.

Sound pressure: Pressure oscillations generated by a vibrating surface or turbulent fluid flow causing high and low pressure areas to be formed which propagate from the source as sound.

4.0 RESPONSIBILITY

A. Directors/Administrators

1. Department Directors are responsible for implementing the Hearing Conservation Program and distributing this procedure. Affected Departments shall appoint a Hearing Conservation Administrator.

B. Supervisors

1. Supervisors shall monitor the Hearing Conservation Program.

C. Employee

1. Employees shall comply with the Hearing Conservation Program.

D. Central Safety Services

1. Central Safety Services shall establish and implement city-wide safety procedures and programs to increase safety awareness to all employees.

5.0 TRAINING AND EDUCATION

1. A training program will be administered under the guidance of Central Safety Services to all employees exposed to noise levels at or above an eight hour TWA of 85 dBA or have a diagnosed occupational hearing loss. This program shall be repeated annually. Extended employee work shifts will require a reduction in dBA action levels – see definitions.
2. Hearing Conservation Program Administrators or their designees are responsible for the actual training.
3. The departments must keep a record of all employees trained in hearing conservation. The record shall include:
 - a. Employee name;
 - b. Employee PR number;
 - c. Date of training;
 - d. Course content, and
 - e. Instructor's name.
4. All participants shall sign an attendance sheet.

6.0 GENERAL

A. Permissible Exposure Levels

1. When employees are subject to sound exceeding those listed in Table 1, feasible administrative controls or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table 1, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

TABLE 1 – PERMISSIBLE NOISE EXPOSURES

Duration per day/hours	Sound level dBA slow response
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
.5	110
.25	115

Subject: Hearing Conservation Program	Number: IH-003	Rev. January 1, 2013	Effective Date: January 1, 1997	Page 4 of 9
--	-------------------	-------------------------	------------------------------------	----------------

***Note: When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each.**

Employees must not be exposed to impact noise greater than 140 dBA peak.

2. The City of Tucson shall administer a continuing, effective hearing program as described in the body of this procedure whenever an employee's noise exposures equal or 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 fifty percent (50%). OSHA Table G-16A (not listed) shall be referenced when noise exposure levels are computed, without regard to attenuation provided by the use of personal protective equipment

B. Identification of High Noise Areas

1. The Department Program Administrator shall contact Central Safety Services for monitoring of suspected high noise level areas.

C. Hierarchy of Control

1. When noise monitoring approaches or exceeds the OSHA Action Level of 85 dBA (8-hour TWA) the following hierarchy shall be followed in attempt to mitigate or limit noise levels:
 - Administrative Controls
 - Engineering Controls
 - Hearing Protection
 - Hearing Conservation Program Implementation
 - Employee Education
2. When employees are subjected to noise levels exceeding an eight hour TWA of 85 dBA, each affected employees shall be notified regarding the results of the noise monitoring and each affected employee shall have the opportunity to observe any noise measurement conducted in their workplace.

D. Area Monitoring

1. Noise surveys will be initially conducted by Central Safety Services at the request of the Department. If the results of the initial testing approach the action level then additional testing may be warranted. Central Safety Services shall consult with the Industrial Hygienist regarding the need to proceed with specific testing and/or personal employee monitoring.

Subject: Hearing Conservation Program	Number: IH-003	Rev. January 1, 2013	Effective Date: January 1, 1997	Page 5 of 9
--	-------------------	-------------------------	------------------------------------	----------------

2. Central Safety Services shall notify the Department, in writing of the results of the Audiometric testing and the Department shall notify each employee in writing of the results of monitoring and the area monitored will also be posted with the results for a period of one week.
3. If a noticeable change in either equipment or operation occurs, the Department shall request to Central Safety Services, that additional area noise surveys be conducted.

E. Personnel Monitoring (Dosimetry)

1. Noise dosimetry will be performed if noise levels are suspected to exceed the (8-hour TWA) of 85 dBA. Dosimetry studies will be conducted by Central Safety Services' Industrial Hygienist.
2. All noise dosimetry results shall be posted in the work area easily accessible to affected employees for a period of five working days. The affected department will be notified in writing of recommendations and required action.

F. Sound Level Meters

1. All sound equipment and noise meters will be calibrated by Central Safety Services and/or the Industrial Hygienist, according to the manufacturer's instruction. Sound equipment shall be independently calibrated by the manufacturer or specified testing company, according to the manufacturer's instruction. Any questions concerning equipment calibration can be directed to the City's Industrial Hygienist.

G. High Noise Area Inspections

1. Periodic inspections of high noise areas by the Department will be performed to monitor the use of hearing protection by employees. Departments shall ensure that required posting is done and check changes in area noise levels.

Central Safety Services shall be notified of problem areas so that further evaluation can be made.

H. Employee Notification - Signs

1. Signs and Occupational Noise Standard posters indicating equipment and areas of high noise shall be posted conspicuously to ensure that employees are aware where hearing protection must be worn. This will be the responsibility of each department.
2. Departments will be responsible in obtaining the required signs. OSHA required Hearing and Conservation posters may be obtained from Central Safety Services. To ensure complete visibility, signs must be kept clean and unobstructed.

Subject: Hearing Conservation Program	Number: IH-003	Rev. January 1, 2013	Effective Date: January 1, 1997	Page 6 of 9
--	-------------------	-------------------------	------------------------------------	----------------

I. Administrative Controls

1. The first option to reduce employee exposure to noise in the workplace shall be Administrative Controls that are intended to eliminate, reduce or limit employee exposure noise by:
 - a. Eliminating the source of noise exposure
 - b. Limiting the source of noise exposure by a reduction in the work process
 - b. Limiting employee exposure to noise by job or task rotation

J. Engineering Controls

1. The second option to reduce employee exposure to noise in the workplace shall be Engineering Controls that reduce employee exposure to noise by:
 - a. Relocating or segregating of noise-producing source
 - b. Sound-proofing or Sound-blanketing of noise-producing source

K. Personal Protective Equipment

1. If Administrative Controls are not feasible and/or Engineering Controls cannot reduce the noise exposure under the OSHA Action Levels, hearing protection shall be required.
2. Departments shall make hearing protection available to all employees exposed to an eight hour TWA of 85 dBA or greater at no cost to the employees. Hearing protection shall be replaced as necessary. The adequacy of the hearing protector attenuation shall be re-evaluated whenever employee noise exposure increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. In this case, departments shall provide more effective hearing protectors.
3. It is the direct responsibility of supervisors to ensure that employees properly use hearing protection whenever working in high noise environments. Supervisors are responsible to ensure that employees use only authorized hearing protection devices. Supervisors are responsible to ensure that all unauthorized hearing protection devices are removed from City premises.
4. Departments shall establish policies concerning hearing protection for other persons not specifically covered by this program (i.e., visitors).
5. Employees shall be given the opportunity to select their hearing protection from a variety of suitable hearing protection provided only as stock items at City Stores, and have been approved by Central Safety Services.

Subject: Hearing Conservation Program	Number: IH-003	Rev. January 1, 2013	Effective Date: January 1, 1997	Page 7 of 9
--	-------------------	-------------------------	------------------------------------	----------------

6. The Department shall provide or coordinate training in occupational noise procedures. The Department shall ensure proper initial fitting and supervise the correct use of all hearing protection. The Department shall contact Central Safety Services regarding questions or opinions as to the correct fit and use of hearing protection.
7. Employees may voluntarily wear hearing protection under any conditions where ambient or nuisance noise is present providing, in the opinion of the department, the wearing of hearing protection would not cause or contribute to an additional safety hazard.

L. Hearing Conservation Program

1. When any combination of Administrative Controls, Engineering Controls or Personal Protective Equipment does not reduce the noise exposure below the OSHA Permissible Exposure Level (PEL) than any exposed employee shall be enrolled in the Hearing Conservation Program.

M. Audiometric Testing

1. Audiometric testing shall be performed by a licensed, certified audiologist, otolaryngologist or other physician or technician in accordance with the requirements for Audiometric testing set forth in OSHA 1910.95 (h), in accordance with the American National Standard Specification for Audiometers (incorporated by OSHA reference 1910.6) and pursuant to OSHA Appendix C – Audiometric Measuring Instruments.
2. Each department shall establish and maintain an audiometric testing program. Audiometric testing will be made available to all employees whose exposures equal or exceed an eight hour time weighted average of 85 decibels, at no cost to the employee.
3. All applicants who shall be working in areas with noise exposure above the action level shall be given a hearing screening as a standard part of the pre-employment examination, or within six (6) months of their first exposure. This testing shall establish the baseline audiogram.
4. Annual audiometric examinations are given to all employees working regularly in areas where the noise level is at or above 85 dBA for eight hours or where employees have a diagnosed occupational hearing loss.
5. The departments will be responsible for scheduling their employees for annual hearing testing and ensuring that the appointments are kept. The employer shall notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.

Subject: Hearing Conservation Program	Number: IH-003	Rev. January 1, 2013	Effective Date: January 1, 1997	Page 8 of 9
--	-------------------	-------------------------	------------------------------------	----------------

N. Threshold Shift

1. A Threshold Shift is a change in hearing threshold relative to the baseline audiogram average of 10db or more at 2000, 3000, and 4000 Hz in either ear.
2. Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. If a standard threshold shift has occurred, the employee shall be notified in writing of the threshold shift, within twenty-one (21) days, by the testing entity. Employees that experience a threshold shift, determined by the treating physician to occupational in nature shall:
 - a. Be fitted with hearing protectors and be trained in their use and care and be required to utilize hearing protectors. The hearing protectors must attenuate employee exposure at least to an 8-hour TWA of 90 decibels; or
 - b. Employees already wearing hearing protectors shall be refitted and retrained in their use and care or shall be provided with hearing protection offering greater attenuation. The hearing protectors must attenuate employee exposure to an 8-hour TWA of 85 decibels or below.

O. Record Keeping

1. The City shall retain all employee audiometric test results. The record shall include:
 - a. Name, payroll number and classification of the employee;
 - b. Date of the audiogram;
 - c. The examiner's name;
 - d. Date of the last acoustic or exhaustive calibration of the audiometer, including measurement of the background sound pressure levels in audiometric test booths;
 - e. Employee's most recent noise exposure assessment.
2. Noise exposure measurement results will be retained for at least **two years** by the City Of Tucson, Central Safety, and will be available for inspection by authorized personnel.
3. Audiometric test results shall be retained for the duration of the affected employee's employment. These records shall be retained by the City Of Tucson, Human Resources., and the City physician's facilities. These records will be made available upon request by the employee, employees' representative, or OSHA.

Subject: Hearing Conservation Program	Number: IH-003	Rev. January 1, 2013	Effective Date: January 1, 1997	Page 9 of 9
--	-------------------	-------------------------	------------------------------------	----------------

P. Access to Information and Training Materials

1. Departments shall make available a copy of the OSHA Standard 1910.95 Occupational Noise Exposure. This document can be located and printed by accessing www.OSHA.gov and referencing the Standard number. This standard shall be made available to any employee requesting it. A copy of the standard must be posted in all areas where noise levels equal or exceed an eight hour TWA of 85 dBA.
2. A list of those employees requiring annual hearing testing and hearing conservation training shall be made available by the Department Personnel Representative to Central Safety Services upon request.

7.0 ADVICE AND COUNSEL

Central Safety Services and the Hearing Conservation Program Administrator will review this procedure periodically.

Standard of Occupational Safety and Health Act 29 CFR 1910.95