



SAFETY DIRECTIVE

Title: Hearing Conservation Program
Issuing Department: Human Resources Department
Effective Date: December 20, 2023
Approved: Curry C. Hale, Human Resources Director
Type of Action: Revision

1.0 PURPOSE

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

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 directive, the stricter of the two shall apply.

2.0 DEPARTMENTS AFFECTED

All Town of Marana departments and 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.

3.0 REFERENCES

3.1 OSHA Standard 29 CFR 1910.95 – Occupational Noise Exposure

4.0 DEFINITIONS

4.1 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%).

4.1.1 10-hour shift = 83 dBA

4.1.2 12-hour shift = 82 dBA

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

4.3 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.

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

4.5 Criterion sound level: A sound level of 90 decibels.

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

- 4.7 Hearing Conservation Program Administrator (HCPA): A person assigned by the Town to administer the Hearing Conservation Program. The HCPA is in the Human Resources Department.
- 4.8 Hertz (Hz): Unit of measurement of frequency, numerically equal to cycles per second.
- 4.9 Medical pathology: A disorder or disease. For purpose of this directive, a condition or disease affecting the ear, which should be treated by a physician specialist.
- 4.10 Noise dose: The time-weighted average noise exposure expressed as a percentage of the permissible exposure limit. A dose of 100% equals an 8-hour time-weighted average of 90 dBA.
- 4.11 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.
- 4.12 Otolaryngologist: A physician specializing in diagnosis and treatment of disorders of the ear, nose and throat.
- 4.13 Representative exposure: Measurements of an employee's noise dose or 8- hour time weighted average sound level that the employer deems to be representative of the exposure of other employees in the workplace.
- 4.14 Sound level: The intensity of sound as measured by an instrument and reported in decibels.
- 4.15 Sound level meter: An instrument for the measurement of sound level.
- 4.16 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.
- 4.17 Threshold shift: A change in hearing threshold relative to the baseline audiogram average of 10 dBA or more at 2000, 3000, and 4000 Hz in either ear.
- 4.18 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.

5.0 POLICIES AND PROCEDURES

5.1 Education and Training

- 5.1.1 A training program will be administered under the guidance of the Human Resources Department to all employees exposed to noise levels at or above an eight hour TWA of 85 dBA. This program shall be repeated annually. Extended employee work shifts will require a reduction in dBA action levels – see definitions.
- 5.1.2 Hearing Conservation Program Administrators or their designees are responsible for the actual training.
- 5.1.3 The Town will keep a record of all employees trained in hearing conservation. The record shall include:
 - 5.1.3.1 Employee name;
 - 5.1.3.2 Date of training;
 - 5.1.3.3 Evaluation score;
 - 5.1.3.4 Course content

5.2 Permissible Exposure Limits

- 5.2.1 When employees are subject to sound exceeding those listed in Table 1 below, 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 limits 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

- 5.2.2 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.
- 5.2.3 Employees must not be exposed to impact noise greater than 140 dBA peak.
- 5.2.4 The Town of Marana shall require employees to participate in the hearing conservation program 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 considered, without regard to attenuation provided by the use of personal protective equipment.

5.3 Noise Monitoring

- 5.3.1 Noise monitoring will be initially conducted by Human Resources Department or a Certified Industrial Hygienist at the request of the department or if noise levels are potentially exceeding the standard. If the results of the initial testing approach the action level, then additional testing may be warranted. The Human Resources Department shall consult with a Certified Industrial Hygienist regarding the need to proceed with specific testing and/or personal employee monitoring.
- 5.3.2 The Human Resources Department shall notify the department, in writing of the results of any 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.
- 5.3.3 If a noticeable change in either equipment or operation occurs, the department shall request the Human Resources Department conduct additional noise monitoring.

5.4 Personnel Monitoring (Dosimeter)

- 5.4.1 Noise dosimeter monitoring will be performed if noise levels are suspected to exceed the (8-hour TWA) of 85 dBA. Dosimeter studies will be conducted by the Human Resources Department or a Certified Industrial Hygienist.
- 5.4.2 All noise dosimeter 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(s).

5.5 Employee Notification

- 5.5.1 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.
- 5.5.2 Departments will be responsible in obtaining the required signs. To ensure complete visibility, signs must be kept clean and unobstructed.

5.6 Hierarchy of Control

- 5.6.1 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:
 - 5.6.1.1 Eliminate the source of noise
 - 5.6.1.2 Substituting the source of the noise
 - 5.6.1.3 Engineering controls
 - 5.6.1.4 Administrative controls
 - 5.6.1.5 Hearing Conservation Program implementation

5.7 Elimination The first option to reduce employee exposure to noise in the workplace shall reduce or limit employee exposure noise by:

- 5.7.1 Eliminating the source of noise exposure.

5.8 Substitution Replacing equipment or processes that cause high levels of noise exposure with those that produce lower levels of noise.

5.9 Engineering Controls The third option to reduce employee exposure to noise in the workplace shall be engineering controls that reduce employee exposure to noise by:

- 5.9.1 Relocating or segregating of noise-producing source
- 5.9.2 Sound-proofing or sound-blanketing of noise-producing source

5.10 Administrative Controls The next option to reduce employee exposure to noise in the workplace shall be Administrative controls that reduce employee exposure to noise by:

- 5.10.1 Limiting the source of noise exposure by a reduction in the work process.
- 5.10.2 Limiting employee exposure to noise by job or task rotation.

5.11 Hearing Conservation Program When noise levels associated with an employee's daily tasks may exceed the OSHA Permissible Exposure Limit (PEL), that employee shall be enrolled in the Hearing Conservation Program.

5.11.1 Hearing Protection If other methods of control are not feasible and/or cannot reduce the noise exposure under the OSHA Action Levels, hearing protection shall be required.

5.11.2 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 increases to the extent that the hearing protectors provided may no longer provide adequate attenuation. In this case, departments shall provide more effective hearing protectors.

5.11.3 It is the direct responsibility of supervisors to ensure that employees properly use hearing protection whenever working in high noise environments, or with high noise equipment. Supervisors are responsible for ensuring that employees use only suitable hearing protection devices.

5.11.4 Departments shall establish policies concerning hearing protection for other persons not specifically covered by this program (i.e., visitors, contractors, etc.).

5.11.5 Employees shall be given the opportunity to select their hearing protection from a variety of suitable hearing protection devices that have been approved by the Human Resources Department.

5.11.6 The Human Resources Department shall ensure that training in occupational noise procedures is available and assigned to all employees affected by this directive.

5.11.7 Departments shall contact the Human Resources Department regarding questions or opinions as to the correct fit and use of hearing protection.

5.11.8 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.

5.12 Audiometric Testing

5.12.1 Audiometric testing shall be performed by the Town's contracted medical provider who shall have a licensed, certified audiologist, otolaryngologist or other physician or technician on staff in accordance with the requirements for audiometric testing set forth in OSHA Standard 29 CFR 1910.95(h), in accordance with the American National Standard Specification for Audiometers and pursuant to OSHA Standard 29 CFR 1910.95 Appendix C – Audiometric Measuring Instruments.

5.12.2 Audiometric testing will be required of all employees whose exposures equal or exceed an eight hour time weighted average of 85 decibels, at no cost to the employee.

5.12.3 All applicants working in positions with an anticipated noise exposure above the action level shall be given a hearing screening as a standard part of the pre-employment examination. This testing shall establish the baseline audiogram.

- 5.12.4 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.
- 5.12.5 The Human Resources Department will be responsible for scheduling affected employees for annual hearing testing. The departments are responsible for ensuring that the appointments are kept. The Human Resources Department 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.
- 5.13 Standard Threshold Shift: The Town's contracted medical provider shall compare each employee's annual audiogram to that employee's baseline audiogram to determine 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 Town's contracted medical provider. Employees that experience a threshold shift, determined shall:
- 5.13.1 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
- 5.13.2 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.
- 5.14 Recordkeeping
- 5.14.1 The Town shall retain all employee audiometric test results. The record shall include:
- 5.14.1.1 Name of the employee;
- 5.14.1.2 Employees position;
- 5.14.1.3 Date of the audiogram;
- 5.14.1.4 The examiner's name;
- 5.14.1.5 Date of the last acoustic or exhaustive calibration of the audiometer, including measurement of the background sound pressure levels in audiometric test booths;
- 5.14.1.6 Any recent noise exposure assessments.
- 5.14.2 Noise exposure measurement results will be retained for at least two years by the Human Resources Department and will be available for inspection by authorized personnel.
- 5.14.3 Audiometric test results shall be retained for the duration of the affected employee's employment. These records shall be retained by the Town's Human Resources Department. These records will be made available upon request by the employee, employee's representative, or OSHA.

5.15 Access to Information and Training Materials

- 5.15.1 Departments shall make available a copy of the OSHA Standard 29 CFR 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.
- 5.15.2 The Human Resources Department shall ensure that Hearing Conservation training is available to all employees.
- 5.15.3 A list of those employees requiring annual hearing testing and hearing conservation training shall be made available by the department to the Human Resources Department upon request.

6.0 RESPONSIBILITIES

- 6.1 The Human Resources Department has overall responsibility for the Town’s safety programs.
- 6.2 Department Heads, managers and supervisors are responsible for ensuring that the requirements of this directive are fully implemented in their work areas.
- 6.3 Employees are responsible for attending all mandatory training classes, all required audiometric testing, and understanding the policies and procedures outlined in this directive.
- 6.4 The Human Resources Department is authorized to halt any operation of the Town where there is danger of serious personal injury.

7.0 ATTACHMENTS

- 7.1 NONE

REVISION HISTORY

<i>REV</i>	<i>DESCRIPTION OF CHANGE</i>	<i>DATE</i>
OR	Original Release	7/1/14
REV	Updated to reflect changes in responsibilities	6/15/2023
REV	Revised and approved by Human Resources	12/20/2023

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