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## 1.0 PURPOSE

This Hearing Conservation Program (HCP) has been developed in accordance with the U.S. Occupational Safety and Health Administration (OSHA) Occupational Noise Exposure standard (29 CFR 1910.95).

The HCP establishes the requirements for hearing protection procedures and policies at Texas Woman's University (TWU).

However, based on current research and the recommendations of various health and safety organizations, TWU has determined that instead of using the OSHA "criterion level" of 90 dB, this program will instead use 85 dB. In other words; TWU employees exposed to noise levels of 85 dB or greater averaged over an 8-hour time period must be included in this program, and engineering controls and personal protective equipment must be utilized to keep exposure below this level.

The intent of this program is to instruct TWU employees of their roles and responsibilities when conducting work that exposes them to occupational noise above the 85 dB time weighted average.

## 2.0 DEFINITIONS

The following regulatory definitions (as specified in 29 CFR 1910.95) are relevant to the TWU HCP:

**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.

**Decibel (dB)** – Unit of measurement of sound level.

**Medical pathology** – A disorder or disease. For purposes of this program; a condition or disease affecting the ear, which should be treated by a physician specialist.

**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.

**Sound level** – Ten times the common logarithm of the ratio of the square of the measured weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). OSHA requires SLOW time response, in accordance with ANSI S1.4-1971 (R1976) to be used for most measurements.

**Sound level meter** – An instrument for the measurement of sound level.

**Standard threshold shift** – A standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear. In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the Annual Audiogram.

**Time-weighted average (TWA) sound level** – That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.

### 3.0 COMPLIANCE

All TWU employees are required to comply with the restrictions and limitations imposed upon them by this program when working in areas where they are exposed to occupational noise above 85 dB TWA. Employees who have been notified through training that they must wear hearing protectors in areas, or while conducting tasks, designated by Risk Management shall be subject to disciplinary action for non-compliance.

#### 4.0 NOISE MONITORING

TWU is required to perform noise monitoring in order to delineate areas where employees are exposed to sound levels above 85 dB TWA. TWU will conduct both area monitoring for activities that are generally stationary, and personal dosimetry monitoring where tasks involve a high level of movement.

Noise monitoring at TWU will generally be conducted using a sound level meter set to the A-scale, slow response, that has been suitably calibrated before use. Different sound level meter settings may be necessary for special circumstances such as intermitted impact noise (

Through noise monitoring conducted to date; TWU has determined that employees working in the following areas or conducting the following tasks for the majority of their 8 hour shift may be exposed to sound levels above 85 dB:

- Denton Campus Chiller Plant (when working in the plant for more than an hour in one day)
- Denton Campus Boiler Plant (when working in the plant for more than an hour in one day)
- Paint Booth in Denton Campus Facilities Management & Construction Service Center (when working in or near the booth for more than 1 hour in a day)
- Riding Mower Operation
- Push Lawn Mower Operation
- Leaf Blower Operation
- Weed Trimmer Operation
- Landscaping Edger Operation
- Power Hedge Trimmer Operation
- Golf Course Tractor Mowing Rough Areas
- Golf Course Fairway Mower

Areas or tasks that have been monitored but determined to not expose employees to sound levels above 85dB include the following:

- Golf Course Deck Mower
- FMC welding shop

TWU has not identified any employees are currently exposed to occupational noise at or above the 140 dB ceiling for instantaneous exposures.

There may be additional areas/tasks that exceed these applicable thresholds that have not yet been identified though noise monitoring. Faculty, staff, and students are encouraged to wear hearing protection in any area or when conducting tasks with loud noises even if they do not appear on the above list.

Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that additional employees may be exposed at or above 85 dB, or if there is evidence that hearing protection equipment may no longer be adequate. Employees or their representatives may observe any noise monitoring events upon request.

## 5.0 ADMINISTRATIVE AND ENGINEERING CONTROLS

When it is determined that employees working in a particular area or conducting a particular task are exposed to sound levels above 85 dB, TWU will first attempt to control the associated noise through administrative and engineering controls. If feasible administrative (e.g. employee rotation) and engineering controls (e.g. sound absorbing materials, ceiling baffles, anti-vibration mounts, and mufflers) do not sufficiently reduce the sound level in the area to below 85 dB, employees assigned to these areas shall be included in the audiometric testing and training portions of the HCP. Employees exposed to sound levels above 85 dB shall be informed during the mandatory training.

## 6.0 HEARING PROTECTORS

If, after implementation of administrative and engineering controls, employees are found to be exposed to sound levels at or above 85 dB TWA, TWU shall provide personal hearing protectors. A variety of hearing protectors shall be made available by TWU to ensure equipment suitable for all affected employees is available. Use of hearing protectors shall be **mandatory** for all employees exposed to sound levels at or above 85 dB TWA.

Only hearing protectors with sufficient attenuation capability to reduce employees' noise exposure below 85 dB TWA shall be provided. Hearing protectors list a Noise Reduction Rating (NRR) on the packaging, which is the manufacturer's claim of noise exposure reduction in dB. However, OSHA

regulations require that the attenuation capability of hearing protectors be determined by subtracting 7 dB from the NRR listed on the packaging. The remainder is then subtracted from the noise monitoring results to determine if the hearing protector in question is sufficient to reduce the noise exposure to below 85 dB.

## 7.0 AUDIOMETRIC TESTING PROGRAM

All TWU employees exposed to sound levels above 85 dB must be included in the audiometric testing program. The audiometric testing program consists of Baseline Audiograms and Annual Audiograms provided by TWU at no cost to employees. Within 6 months of an employee's first exposure at or above the 85 dB, a valid Baseline Audiogram shall be established against which subsequent audiograms can be compared. Annually thereafter, an audiogram shall be obtained for comparison to the Baseline Audiogram.

In order to obtain valid audiograms, TWU employees are required to avoid loud noises, both occupational and other, for at least 14 hours. If an employee is unable to avoid occupational noise in the 14 hours prior to the audiogram, hearing protectors shall be provided for their use.

If in comparing the Annual Audiogram to the Baseline Audiogram it is determined that a Standard Threshold Shift has occurred, TWU will notify the affected employee in writing within 21 days. Unless a physician determines that the Standard Threshold Shift is not work related or aggravated by occupational noise exposure, one of the following shall occur:

- The employee shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
- The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if it is suspected that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
- The employee will be informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

TWU may require another audiogram within 30 days if it appears that a Standard Threshold Shift has occurred to determine if the Standard Threshold Shift is not persistent.

An Annual Audiogram can be substituted for the current Baseline Audiogram if the medical professional evaluating the audiogram determines that the Standard Threshold Shift is persistent or the hearing threshold shows significant improvement over the Baseline Audiogram.

Audiometric testing and audiogram comparisons shall be conducted by medical professionals in accordance with 29 CFR 1910.25(g)(3) and 29 CFR 1910.25 Appendix C. Copies of the applicable regulations shall be provided to the medical professional conducting the test as is necessary.

## **8.0 TRAINING**

TWU employees exposed to sound levels at or exceeding 85 dB TWA will be required to attend training covering the following at a minimum:

- The effects of noise on hearing;
- The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and
- The purpose of audiometric testing, and an explanation of the test procedures.

The OSHA Occupational Noise standard (29 CFR 1910.95) will also be posted where employees can review it.

## **9.0 RECORDKEEPING**

Audiometric test records shall be maintained for the duration of an employee's employment with TWU, and shall include the following information:

- Name and job classification of the employee;
- Date of the audiogram;
- The examiner's name;
- Date of the last acoustic or exhaustive calibration of the audiometer;

- Employee's most recent noise exposure assessment;
- Records of the measurements of the background sound pressure levels in audiometric test rooms.

The majority of this information shall be provided to TWU by the medical professional who conducts the audiometric testing.

Noise monitoring records shall be maintained on site for at least two years.

An employee's own audiometric test records and TWU noise monitoring records will be made available to employees, former employees, and representatives designated by the individual employee. Audiometric test records shall be retained for the duration of the affected employee's employment.

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*Work place safety is in everyone's best interest. Any violations of this program or any other programs or standards should be reported immediately to Risk Management.*