

REDWOODS COMMUNITY COLLEGE DISTRICT

Hearing Conservation Program

Introduction

The Redwoods Community College District is committed to protecting the health, safety, and welfare of its employees. The District will make all reasonable attempts to determine what operations and activities may cause harmful noise levels in the work environment. When an assessment indicates noise levels above permissible exposure limits the District will attempt to implement feasible engineering and/or administrative controls to reduce the exposure to a safe level. While engineering and/or administrative controls are being implemented or if the controls are not adequate, the District will require implementation of a Hearing Conservation Program.

The Hearing Conservation Program will be based on the requirements of 8 CCR, Article 105.

Many operations and activities may generate high noise levels. Harmful noise levels may cause occupational hearing losses or related hearing illnesses to employees working in such environments, therefore, it is essential that exposure to harmful noise levels be controlled.

The primary objective would be to prevent harmful noise levels. The prevention of harmful noise levels shall be accomplished by engineering controls whenever feasible. Examples of engineering controls may include enclosure or segregation of the operation, application of acoustical materials to absorb sound waves, and/or substitution of equipment which will produce lower sound levels.

When engineering controls are not feasible or do not achieve full compliance to permissible exposure limits; administrative controls, where practical, shall be implemented. Administrative controls may include such items as work practices and time allotted to exposures.

Hearing protection equipment shall be used to prevent or reduce harmful noise levels only under the following conditions; when feasible engineering and administrative controls fail to reduce harmful exposures to employees to a safe level, or during the time period necessary to install or implement feasible engineering controls.

If sound level monitoring determines that employees are not exposed to harmful noise levels in excess of permissive exposure levels hearing protection equipment may be provided to employees for their use and comfort when working in intermittent noisy environments. For such use of hearing protection equipment employees will be trained on the District's Written Hearing Conservation Plan.

Program Administration

The Hearing Conservation Program will be under the responsibility of the District's Environmental Health & Safety Department. To ensure that the Hearing Conservation Plan remains a viable document that reflects the current needs and status of the District, the Plan will be reviewed annually or when equipment and/or operations change by the Environmental Health & Safety Manager or by the Safety Committee.

Hearing Protection: When and Where to be Worn

Protection against the effects of noise exposure shall be provided when the noise exposures equal or exceed an 8-hour time-weighted-average (TWA) of 85 decibels measured on the A-scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with 8 CCR, Article 105, Appendix A, including Table N-1, and without regard to any attenuation provided by the use of personal protective equipment.

When employees are subject to sound levels exceeding those listed in 8 CCR, Article 105 feasible engineering or administrative controls shall be utilized. If such controls fail to reduce sound levels within permissible levels, personal protective equipment shall be provided and used to reduce sound levels to within permissible levels. If the variations in noise level involve intervals of one second or less, the noise is to be considered continuous. Exposure to impulse or impact noise should not exceed 140 dB peak sound level pressure level.

Noise Level Monitoring

When information indicates that any employee's exposure may equal or exceed an 8-hour TWA of 85 dB, the District shall obtain measurements for employees who may be exposed at or above that level. The monitoring may be either area monitoring or personal monitoring that is representative of the employee's exposure.

The first step of the monitoring program shall be to identify the employees or work classifications potentially exposed to high noise levels. Then the nature of the employee's work task shall be evaluated to determine if area or personal noise monitoring shall be conducted. Area monitoring may be used to estimate noise exposure when the noise levels are relatively constant and employees are not mobile. Where circumstances such as high worker mobility, significant variation in sound level, or significant component of impulse noise make area monitoring

generally inappropriate, the District shall use representative personal monitoring sampling, unless area sampling produces equivalent results. All continuous, intermittent and impulsive sound levels from 80 dB to 130 dB shall be integrated into the computation.

Monitoring Methods: Noise exposure shall be measured utilizing either a sound level meter or a dosimeter. Sound level meters will be used to take area measurements. Dosimeters will be used to take personal monitoring samples. All instruments used to measure employee noise exposure shall be calibrated before and after each use to ensure measurement accuracy. The instrument manufacturer's instructions shall be followed for calibration and maintenance of the monitoring equipment.

When sound level meters are selected, several measurements at different locations within the workplace being assessed and at different times of the day shall be made. A map shall be drawn to identify the location at which the readings were taken, and a record of the times the readings were taken shall be maintained.

A dosimeter shall be utilized for personal monitoring. The dosimeter microphone shall be attached to the employee's clothing as near the hearing zone as possible and the exposure read at the end of the desired time period. A record shall be kept of the employee's activities and work location(s) during the time of measurement.

When Monitoring Shall Occur: The District shall conduct monitoring at the beginning of the Hearing Conservation Program to determine the current employee exposures. Additional monitoring shall be conducted on an annual basis in order to ensure all employees are included in the Hearing Conservation Program. Monitoring shall also be conducted whenever there is a significant change in machinery, production processes, procedures or controls which may increase noise exposures to the extent that; additional employees may be exposed at or above action levels or the attenuation provided by the hearing protectors being used may be rendered inadequate to meet the requirements of the regulations.

The District shall provide affected employees or their representatives with an opportunity to observe any noise measurements conducted in compliance with Hearing Conservation regulations.

Audiometric Testing Program

The District shall establish and maintain an audiometric testing program. The testing program shall include all employees whose exposures equal or exceed an 8-hour TWA of 85 dB measured on the A-scale (slow response) or, equivalently, a dose of 50%. The testing shall be conducted at no cost to the employees and the employees shall be notified of the test results.

Audiometric tests shall be performed by licensed or certified audiologist; otolaryngologist; or other physician; or by a technician who is certified by the council of Accreditation of Occupational

Hearing Conservation; or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician (herein after referred to as medical expert).

The person conducting the audiometric tests shall provide the District with written results of the tests, instrument calibration and certification information and the credentials of the person conducting the tests and the credentials of the medical expert. All audiograms, testing equipment, equipment calibration, test requirements, personal requirements and certifications shall be in accordance with 8 CCR Article 105.

The District shall establish for each employee exposed at or above the action level a valid baseline audiogram against which subsequent audiograms will be compared. The baseline audiogram shall be conducted within six months of an employee's first exposure at or above the action level or as allowed by regulation. Audiograms shall be conducted at least annually after obtaining the baseline audiogram for all employees exposed at or above the action level.

Evaluation of Audiograms

The District will ensure each employee's annual audiogram is compared to their baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. This comparison may be done by a technician. If the annual audiogram shows that an employee has suffered a standard threshold shift, the District shall obtain a retest within 30 days and consider the results of the retest as the annual audiogram.

The District will ensure a medical expert reviews all problem audiograms to determine whether there is a need for further evaluation. The District will provide the medical expert all information as required by 8 CCR Article 105.

If the comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the District will inform the employee of this fact, in writing, within 21 days of the determination. 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 age (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in 8 CCR Article 105, Appendix F.

If the standard threshold shift is determined to be work related and aggravated by occupational noise exposure, the District shall ensure the following steps are taken:

A if the employee was not previously wearing hearing protection, they shall be fitted with

- hearing protectors, trained in their use and care, and required to use them;
- Λ if the employee was already using hearing protection, they shall be refitted and retrained in the use of hearing protectors, provided with hearing protectors providing greater attenuation if necessary, and required to use them;
- Λ the employee will be referred for clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the District suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
- Λ the employee will be informed of the need for an otological examination if a medical pathology of the ear which is unrelated to the use of hearing protectors is suspected.

If subsequent audiometric testing on an employee whose exposure to noise is less than an 8-hour TWA of 90 dB indicates that a standard threshold shift is not persistent, the District:

- Λ shall inform the employee of the new audiometric interpretation, and
- Λ may discontinue the requirement for the employee to use hearing protection.

An annual audiogram may be substituted for the baseline audiogram when in the judgement of the medical expert who is evaluating the audiogram:

- Λ the standard threshold shift revealed by the audiogram is persistent, or
- Λ the hearing threshold shown in the annual audiogram indicated significant improvement over the baseline audiogram.

Hearing Protectors

The District will make hearing protectors available to all employees exposed to an 8-hour TWA of 85 dB or greater at no cost to the employees. hearing protectors shall be replaced as necessary. The District shall provide the employees the opportunity to select their hearing protectors from a variety of suitable hearing protectors. Employees will be trained in the proper use and care of all hearing protectors provided. The District will ensure proper initial fitting of hearing protectors. Supervisors and management personnel shall supervise and enforce the correct use of all hearing protectors. Failure on the part of the employee to comply with the requirement to correctly wear hearing protection may result in disciplinary action.

Hearing Protector Attenuation

The District shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. The District will use one of the methods described in Appendix I of this document. Hearing protectors must attenuate employee exposure at least to an 8-hour TWA average of 90 dB for employees who have not experienced a standard threshold shift. For

employees who have experienced a standard threshold shift, hearing protectors shall attenuate employee exposures to an 8-hour TWA of 85 dB or below. The adequacy of hearing protector attenuation shall be reevaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The District will provide more effective hearing protectors where necessary.

Attenuation Evaluation

The District will evaluate the hearing protectors provided to ensure the proper attenuation for the specific noise environments in which the protector will be used. One of the following methods will be utilized to estimate the adequacy of hearing protector attenuation.

The Noise Reduction Rating (NRR) developed by the Environmental Protection Agency (EPA) will be related to the individual worker's noise environment in order to assess the adequacy of the attenuation of a given hearing protector. The NRR, which must be shown on packaging, is used in conjunction with one of the following methods to determine whether a particular hearing protector provides adequate protection within a given exposure environment.

When using the NRR to assess hearing protector adequacy, one of the following methods must be used:

1. When using a dosimeter capable of C-weighted measurements obtain the employee's C-weighted dose for the entire work shift and convert to TWA, then subtract the NRR from the C-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.
2. When using a dosimeter that is not capable of C-weighting measurements, convert the A-weighted dose to TWA, subtract 7 dB from the NRR, subtract the remainder of the NRR from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.
3. When using a sound level meter set to the A-weighting network obtain the employee's A-weighted TWA, subtract 7 dB from the NRR, and subtract the remainder of the NRR from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.
4. When using a sound level meter set on the C-weighted network obtain a representative sample of the C-weighted sound levels in the employees environment, subtract the NRR from the C-weighted average sound level to obtain the estimated A-weighted TWA under the ear protector.

In place of using the NRR methods hearing protectors may be evaluated by using one of the three methods developed by the National Institute for Occupational Safety and Health (NIOSH) which are described in the "List of Personal Hearing Protectors and Attenuation Data," HEW Publication No. 76-120, 1975, pages 21-37. These methods are known as NIOSH methods #1,

#2, and #3. The NRR methods described above is a simplification of NIOSH method #2.

Employee Training

The District shall institute a training program for all employees who are exposed to noise at or above an 8-hour TWA of 85 dB, and shall ensure employee participation in such training programs. The training program shall be repeated annually for each employee included in the hearing conservation program. Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

Training will consist of the following at a minimum:

- Λ the effects of noise on hearing;
- Λ the purposes of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instruction on selection, fitting, use and care;
- Λ the purpose of audiometric testing, and an explanation of the test procedures;
- Λ the employee's right to review 8 CCR Article 105 and any other pertinent materials used by the District;
- Λ the requirement of the District to notify them of any standard threshold shift.

Record Keeping

The district will maintain and retain records of:

- Λ employee exposures measurements: retention two years
- Λ employee audiometric tests and notifications; retention duration of affected employee's employment;
- Λ audiometric test room measurements and calibrations, retention two years.

The employee audiometric test records shall consist of:

- Λ the name and job classification of the employee;
- Λ the date of the audiogram;
- Λ the examiner's name;
- Λ the date of the last acoustic or exhaustive calibration of the audiometer; and
- Λ the employees most recent noise exposure assessment.

All records required by 8 CCR Article 105 shall be provided upon request to employees, former employees, representatives designated by the individual employee and any authorized representative of the Chief of the Division of Occupational Safety and Health.