

UC Davis Policy and Procedure Manual

Chapter 290, Health and Safety Services

Section 53, Hearing Conservation

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Responsible Department: Environmental Health and Safety

Source Document: California Code of Regulations, Title 8, Sections 5096-5100

I. Purpose

The section describes the policy regarding employee exposure to occupational noise and the program to help protect UC Davis employees from hearing loss due to occupational noise exposure.

II. Definitions

- A. Action Level—The level of noise exposure at which:
1. An employee must be enrolled in the Hearing Conservation Program (HCP) and provided audiometric testing
 2. Representative noise exposure monitoring is required by CA regulation
 3. Hearing protection and training on noise hazards must be provided to the employee
 4. Cal/OSHA has set the current action level at 85 A-weighted scale decibels, or dBA, over an eight-hour time weighted average (TWA) period.
- B. Administrative Controls—Methods that limit an employee's exposure time to noise. This includes assigning the employee to less noisy areas in the workplace for a certain length of time so the employee shall not exceed the Action Level.
- C. Audiometric Testing—Exams that measure the sensitivity of a person's hearing threshold in decibels. The testing also establishes a baseline hearing threshold that is compared to later exams to determine if hearing loss has occurred.
- D. A-Weighted—The A weighting, expressed as dBA, is the scale used for most occupational noise measurements. The A weighting approximates the range of human hearing as it filters out lower frequency noises, which are not as damaging as the higher frequencies.
- E. Decibels (dB)—A measure of the sound level (loudness). The decibel scale is a logarithmic scale; as an example, a 90 dB noise is ten times louder than an 80 dB noise.
- F. Engineering Controls—May include purchasing quieter equipment using barriers, damping, isolating, muffling, installing noise adsorption material, mechanical isolation, variations in force, pressure or driving speed or any combination of methods to decrease noise levels.
- G. Hearing Protection Devices—Personal protective equipment that is designed to be worn in the ear canal or over the ear to reduce the sound level reaching the ear drum. Examples include ear muffs or plugs.
- H. Noise—Unwanted sound.
- I. Permissible Exposure Limit (PEL)—90 dBA TWA. Employees may be exposed to 90 dBA for an 8 hour TWA exposure without experiencing serious hearing effects.

- J. Sound—A vibration or pressure oscillation that is detectable by the ear drum.
- K. Standard Threshold Shift—A change in hearing threshold relative to the baseline audiogram of an average of 10 dBA or more at 2000, 3000, and 4000 Hz in either ear.
- L. 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.

III. Policy

All personnel who are regularly exposed to occupational noise levels at or exceeding an 8-hour time-weighted average of 85 decibels (dBA) as part of their regularly assigned job duties are required to participate in the HCP.

IV. Hearing Conservation Program Procedures

- A. Exposure monitoring
 - 1. Representative noise monitoring with a designed sampling strategy will be performed by Environmental Health & Safety (EH&S) to allow the identification of employees for inclusion in the HCP and to enable the proper selection of hearing protection.
 - 2. All continuous, intermittent and impulsive sound levels from 80 to 130 dBA will be integrated into the computation.
 - 3. Monitoring will be repeated when any changes occur in the production, process, equipment or controls which might render the hearing protectors inadequate or require additional employees to be included in the program.
 - 4. Employees exposed at or above the action level and their supervisors will be notified in writing of the results of the monitoring and included in the HCP.
 - 5. Employees noise exposure will be reassessed periodically as needed (i.e. following changes in processes, job responsibilities, or equipment).
- B. Audiometric testing
 - 1. Audiometric testing program will be managed by Occupational Health Services/Employee Health Services.
 - 2. Baseline audiograms will be preceded by at least 14 hours without exposure to workplace noise. This requirement may be met by wearing hearing protectors which will reduce the employee's exposure to a sound level of 80 dBA or below.
 - 3. Initial and annual baseline audiograms will be provided for employees whose job classification and noise exposure monitoring demonstrates that workplace noise levels continue to equal or exceed 85 dBA.
 - 4. Employees will be informed in writing within 21 days when an audiogram indicates a standard threshold shift from the baseline audiogram. Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise, the supervisor and EH&S will also be notified for further follow-up.
- C. Hearing protection devices
 - 1. Employees exposed to noise levels at or above 90 dBA must wear hearing protectors. Employees exposed to noise levels at or above the action level of an 8-hour TWA of 85 dBA must wear hearing protectors if they have experienced a documented standard threshold shift or have not obtained a baseline audiogram.
 - 2. Hearing protectors should be made available at no cost to all employees exposed to noise levels at or above the action level of 85 dBA.

3. Employees will be given the opportunity to select their hearing protectors from a variety of suitable types selected by the University.
4. Proper initial fitting and supervision of the correct use of hearing protectors will be provided.
5. For employees who have experienced a standard threshold shift, the attenuation must reduce the sound level to an 8-hour TWA of 85 dBA or less.
6. Reevaluation of hearing protectors will be done whenever a workplace noise level increase renders the hearing protector's attenuation inadequate.
7. Workplaces in which the noise level exceeds 85 dBA will have signs posted. Signs shall read "Hearing Protectors Required."

D. Training

1. Annual training is required for all employees exposed to noise hazards in the workplace.
2. Training will cover the following information:
 - a. the effects of noise on hearing;
 - b. the purpose, advantages, disadvantages, and attenuation of various types of hearing protectors;
 - c. instruction of proper fitting and care of protectors;
 - d. the purpose and procedures of audiometric testing.
3. EH&S provides individualized training that can be accessed and completed online at lms.ucdavis.edu, Hearing Conservation e-course.

V. Responsibilities

A. Department heads, supervisors, Principal Investigators

1. Provide work environments that minimize noise to the greatest extent reasonable.
2. Request that EH&S evaluates noisy operations.
3. Audiometric evaluations for employees are performed at no charge to the department.
4. Provide hearing protection devices at no cost for employees where needed.
5. Ensure that employees exposed to noise over the Action Level are enrolled in the HCP, provided training and provided audiometric exams at no cost.
6. Provide easy access to hearing protection devices and ensure that employees maintain and use such devices as appropriate.
7. Post areas known to present noise hazards with signs requiring the use of hearing protectors.
8. Assure that the students and visitors are adequately informed about noise hazards and are provided hearing protection devices when in high noise areas.
9. Maintain employee training records.

B. Employees

1. Wear approved hearing protection devices in posted noise hazard areas and during tasks identified with potential noise exposure greater than 85 dBA.
2. Maintain hearing protectors in sanitary condition and proper working order.
3. Report noise hazards and hearing protector problems to their supervisors.

C. Environmental Health & Safety

1. Monitor worksites for noise levels and inform employees, supervisors, and Occupational Health Services/Employee Health Services of results.
2. Recommend appropriate engineering and administrative control measures.
3. Assist employees in selection of proper protection devices.
4. Determine whether employees need to be enrolled in the HCP.
5. Provide consultation for all employees experiencing a standard threshold shift.
6. EH&S maintains records of all personal noise exposure monitoring. Exposure monitoring records are maintained for a minimum of two years.

D. Occupational Health Services/Employee Health Services

1. Provide baseline and annual audiometric exams.
2. Provide complete audiometric evaluations as needed to determine a standard threshold shift.
3. Communicate any identified standard threshold shifts to the employee.
4. Communicate any potentially work-related standard threshold shifts to the supervisor and EH&S.
5. Provide information on noise hazards and hearing conservation required under CCR Title 8 Section 5099.
6. Consult with EH&S for further workplace evaluation.
7. Occupational Health Services/Employee Health Services maintains all audiometric testing records for persons enrolled in the HCP for the duration of their employment.

VI. Further Information

For further information concerning the hearing conservation program, contact EH&S at 530-752-1493.

VII. References and Related Policy

- A. California Code of Regulations, Title 8, Article 105, Sections 5095-5100 (<http://www.dir.ca.gov/Title8/sb7g15a105.html>).
- B. UC Davis Policy & Procedure Manual (<http://manuals.ucdavis.edu/PPM/about.htm>):
 1. Section 290-50, Protective Clothing and Equipment.
 2. Section 290-60, Occupational and Preventative Medicine.