

# Hearing Conservation

## 1. Purpose

The purpose of this policy is to prevent noise-induced hearing loss and other detrimental effects of exposure to excessive noise in the work environment. To protect employees who are exposed to high noise levels, USPL has established a Hearing Conservation Program, which operates at locations where noise surveys have identified high levels of occupational noise.

## 2. Scope

This policy applies to all employees who have potential exposure to noise above 85 dBA. The policy states the requirements pertaining to testing, training, noise control, hearing protection, and other aspects of the Hearing Conservation Program. Employees are responsible for enforcing the sections of this policy that apply to contractors and visitors while they are conducting BP business.

## 3. Minimum Requirements

|    | Minimum Requirements)                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Supporting Documentation |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. | All employees exposed to noise levels equal to or greater than 85 dBA (TWA) for an 8-hour shift or 82 dBA (TWA) for a 12-hour shift shall participate in the Hearing Conservation Program.                                                                                                                                                                                                                                                                            | Section 5                |
| 2. | Noise surveys and noise dosimetry testing shall be used to determine areas where hearing protection is required as well as employees and job classifications that must participate in the Hearing Conservation Program.                                                                                                                                                                                                                                               | Section 6                |
| 3. | Employees in the Hearing Conservation Program must complete annual training in hearing protection.                                                                                                                                                                                                                                                                                                                                                                    | Section 7                |
| 4. | Engineering or administrative controls must be evaluated where employees are exposed to noise levels exceeding 90 dBA (TWA) for an 8-hour shift or 87 dBA (TWA) for a 12-hour shift.                                                                                                                                                                                                                                                                                  | Section 8                |
| 5. | Employees shall wear hearing protectors in any of the following situations: <ul style="list-style-type: none"> <li>• At all times in work environments where fixed equipment generates noise levels of 85 dBA or greater when operating.</li> <li>• Where a "Hearing Protection Required" sign is posted.</li> <li>• Within 10 feet of operating construction or maintenance equipment.</li> <li>• Where the PPE Matrix lists hearing protection required.</li> </ul> | Section 9                |
| 6. | Employees in the Hearing Conservation Program must receive an annual audiometric examination that meets OSHA standards.                                                                                                                                                                                                                                                                                                                                               | Section 10               |

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## 4. Definitions

**Attenuation**—The reduction of sound level received by the ear through use of hearing protectors or engineering controls.

**Audiogram**—A chart, graph, or table that is derived from audiometric testing and that depicts an individual's hearing sensitivity. An audiogram shows hearing threshold level (HTL) measured in decibels (dB) as a function of frequency measured in hertz (Hz). A baseline audiogram is one against which future audiograms are compared.

**Decibel (dB)**—A unit on a logarithmic scale for measuring the relative intensity of sound levels detectable by the human ear. The value 1 represents the faintest audible sound; the threshold of pain is 140 dB. The abbreviation dBA indicates the A weighting scale, which reflects perceived loudness as opposed to actual sound intensity.

**Dosimeter**—A device that accumulates an individual's exposure to a substance over time; in the context of hearing conservation, an instrument that measures the amount of noise energy received by the employee over a time period compared with an allowable amount.

**Sound level meter (SLM)**—An instrument for measuring sound pressure levels in decibels.

**Standard Threshold Shift (STS)**—A change in the hearing threshold, relative to the baseline audiogram, of an average of 10 dB or more in either ear at frequencies of 2000, 3000, and 4000 Hz.

**Time-weighted average (TWA)**—A value, expressed in dBA, that represents the average noise exposure measured over a typical work day (usually 8-hour or 12-hour).

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## 5. Roles and Responsibilities

- A. All employees exposed to noise levels equal to or greater than 85 dBA (TWA) for an 8-hour shift or 82 dBA (TWA) for a 12-hour shift shall participate in the Hearing Conservation Program (HCP).
- B. USPLUSPL's Industrial Hygienist and the Health Services Manager are responsible for administering and coordinating the program.
- C. Team Leaders are responsible for program compliance and enforcement.

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## 6. Noise Surveys and Noise Dosimetry Testing

### 6.1. Surveys

- A. The Safety Coordinators shall ensure that noise surveys are conducted to determine noise levels in the workplace.
  1. Noise levels equal to or greater than 85 dBA in fixed equipment areas are designated as high-noise areas where hearing protection is required.
  2. Signs with the message "Caution—Hearing Protection Required" must be posted in each designated high-noise area.
  3. Safety Coordinators must evaluate whether a new survey is required whenever significant changes occur in a process or equipment.
- B. Sound level surveys must be conducted with an ANSI-approved Type II sound level meter.
  1. Meters shall be calibrated prior to use in accordance with the manufacturer's specifications.
- C. All surveys shall be conducted with the sound level meter in the A-weighted slow response mode.
- D. Results of surveys must be documented and kept on file locally or in an online database.

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## 6.2. Dosimetry Testing

- A. Noise dosimetry testing shall be used to identify which employees or job classifications must participate in the Hearing Conservation Program.
- B. Representative sampling and evaluation of each job classification is required to confirm noise exposure.
  1. Noise dosimeters shall be calibrated before and after use in accordance with manufacturers' instructions. Recommendations for dosimeter use shall be carefully followed.
- C. Safety Coordinators must evaluate whether additional dosimetry testing must be completed after the installation of any new equipment that generates a high level of noise.
- D. Dosimetry results must be documented and kept in the USPL health database.

*Note:* Results of dosimetry testing are considered part of the employee's personnel records.

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## 7. Employee Education and Training

- A. Employees in the Hearing Conservation Program must complete annual training.
- B. HCP training must include the following topics:
  - The structure of the ear and the harmful effects of noise on hearing.
  - The purpose, advantages, and disadvantages of various types of hearing protection.
  - The attenuation ratings of hearing protectors and the proper selection, fitting, use, and care of these devices.
  - High-noise areas within the workplace.
  - The purpose and procedures of audiometric testing.
  - OSHA and USPL requirements regarding occupational noise exposure.
- C. USPL Safety Coordinators will ensure that copies of the OSHA Hearing Conservation Standard are posted on the bulletin board at facilities where employees participate in the HCP.

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## 8. Engineering and Administrative Controls

An employee's noise exposure can be reduced through engineering controls, such as treating the noise source or installing low-noise equipment. Administrative controls might involve changes to an employee's work schedule to reduce noise exposure or modifications to the operating schedule of noisy machinery.

- A. Engineering or administrative controls must be evaluated where employees are exposed to noise levels exceeding 90 dBA (TWA) for an 8-hour shift or 87 dBA (TWA) for a 12-hour shift.
- B. In situations where engineering or administrative controls cannot reduce noise below the permissible limit, employees shall observe all hearing protection requirements (see Section 9, "Hearing Protection").

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## 9. Hearing Protection

BP provides hearing protection devices. The most common types of hearing protectors are earmuffs and earplugs. The hearing protectors must attenuate noise levels below 85 dBA.

- A. All employees shall wear hearing protection devices in any of the following situations:
  - 1. In any area where the noise level equals or exceeds 85 dBA (TWA) for an 8-hour shift or 82 dBA (TWA) for a 12-hour shift.
  - 2. At all times in work environments where fixed equipment generates noise levels of 85 dBA or greater when operating.
  - 3. In any area where a "Hearing Protection Required" sign is posted, *regardless of the amount of time an employee spends in that high-noise area.*
  - 4. While operating construction or maintenance equipment such as air hammers, pneumatic tools, generators, vacuum trucks, backhoes, cranes, hot oilers, power tools (grinders, saws), transport truck pumps, snow blowers, lawn maintenance equipment, and backhoes, or within 10 feet of this operating equipment.
- B. Hearing protectors must attenuate employee noise exposure at least to 85 dBA (TWA) for an 8-hour shift and 82dBA (TWA) for a 12-hour shift.
  - 1. Employees shall be given the option of wearing the most comfortable type of hearing protector as long as its attenuation value is not compromised.

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## 10. Audiometric Testing

Audiometric tests can detect hearing loss. An employee's initial audiogram provides a baseline against which subsequent annual audiograms are compared to determine whether a Standard Threshold Shift (STS) has occurred.

### 10.1. Annual Testing

- A. Employees in the Hearing Conservation Program must receive an annual audiometric examination that meets OSHA standards.

*Note:* Employees should have a 14-hour quiet period immediately before their audiometric examination. If they cannot avoid noise exposure, they should wear suitable hearing protection prior to their exam.
- B. New employees whose job classification is included in the program shall receive an audiogram that meets OSHA standards as part of their initial physical examination.
- C. The Health Services Advisor and USPL's Medical Services Vendor will have joint responsibility for coordinating the audiometric testing of employees participating in the program.
- D. The Medical Services Vendor shall ensure that audiometric testing is performed with audiometers within the tolerances permitted by ANSI S3.6-1969.
- E. The results of the audiometric test shall be handled according to the following procedures:
  - 1. Audiograms shall be sent to the Medical Services Vendor for review.
  - 2. The Medical Services Vendor shall forward the audiometric results to the employee's residence and maintain the results in the employee's medical file.
  - 3. An employee whose audiogram results indicate a suspected Standard Threshold Shift (STS) must be retested within 30 days of the initial test date to confirm the shift, or the STS must be accepted. If retesting does not confirm the shift, the case does not have to be recorded.

4. If an audiogram indicates a confirmed STS, the Medical Services Vendor, in consultation with the Health Services Advisor, must ensure that the employee receives written notification of the test results within 21 days from the time a confirmed shift is detected.

## 10.2. Recordkeeping

- A. If a medical professional determines that the hearing loss is work-related, the basis for this determination must be retained in the employee's medical record. See Appendix I, "How to Determine Work-Relatedness in Hearing Loss Cases."
- B. The Medical Services Vendor or the Health Services Advisor will inform the operating supervisor and Safety Coordinator of a confirmed STS in accordance with OSHA's recordkeeping requirements.
- C. Occupational hearing loss cases must be recorded as a work-related illness within seven calendar days on the OSHA 300 Log (i.e., Form 300, "Work-Related Injuries and Illnesses").

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## 11. References

1. ANSI, S1.4-1983, "Specifications for Sound Level Meters"; S3.6-1969, "Specifications for Audiometers"; S1.32-1980, "Specifications for Personal Noise Dosimeters."
2. OSHA, Department of Labor, 29 CFR 1910.95, "Occupational Noise Exposure."

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## Appendix I

# How to Determine Work-Relatedness in Hearing Loss Cases

Under OSHA rules, the employer is allowed to consult a physician or other licensed health care professional to determine whether an employee's hearing loss is work-related or has been significantly aggravated by occupational noise exposure. Work-relatedness should be evaluated on a case-by-case basis.

There are two decisions to be made regarding the work relationship of a specific case. Both decisions require the involvement of appropriate medical personnel.

1. The first determination is whether observed hearing loss is noise-induced hearing loss or the result of some other medical condition, such as wax buildup or an ear infection. If there is an underlying medical condition, it should be treated and resolved where possible and the hearing test repeated.
2. If a medical professional determines that the hearing loss is due to noise exposure, the determination of work relationship is made using the same rules in effect for all other injury and illness cases. If an event or exposure in the work environment either caused or contributed to the hearing loss, the case must be considered work-related (the long-standing "any contribution" rule). The work relationship in each case must be evaluated separately, based on individual circumstances of each case. Whether a person's noise exposure on the job is above 85 dB does not dictate the answer to the question of a causal work relationship. The opinion of medical personnel in this regard is essential. The basis for this determination should be retained in the employee's medical record.