

University of Illinois at Urbana-Champaign  
Division of Safety and Compliance

# Hearing Conservation Program

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## I. PURPOSE

The University of Illinois at Urbana-Champaign (University), through the Division of Safety and Compliance (S&C), has established the Hearing Conservation Program to protect the health of University students, faculty and staff and to assure compliance with State and Federal occupational safety and health standards, particularly the Occupational Noise Exposure Standard of the Occupational Safety and Health Administration (OSHA) located in 29 CFR 1910.95 and enforced at the University by the Illinois Department of Labor.

This Program provides the minimum requirements for unit-specific hearing conservation programs. It is expected that campus units utilizing this Program will develop Unit-Specific Hearing Conservation Programs and site-specific written standard operating procedures (SOPs) to complement and meet the requirements in this general program.

## II. POLICY

It is the policy of the University to protect its students, faculty and staff from noise hazards. This is accomplished as far as feasible with effective engineering controls, employee training, and administrative controls. In cases where these controls are not adequate, employees must be provided with hearing protection to eliminate the potential exposure to noise hazards.

## III. SCOPE

The provisions of the Hearing Conservation Program shall apply to all students, faculty, and staff where:

- Hearing protection is necessary to protect the health of an individual;
- The University requires hearing protection to be worn; and
- Hearing protection is worn for comfort, personal reasons, and/or emergencies.

## IV. RESPONSIBILITIES

The Division of Safety and Compliance shall:

- A. Develop and implement a written hearing conservation program and review it on an annual basis;
- B. Conduct noise surveys and noise dosimetry upon request and as needed to assure adequate protection of students, faculty and staff.
- C. Assist supervisors in the selection of appropriate hearing protection and provide recommendations for appropriate engineering controls.
- D. Provide or arrange for training on hearing conservation and audiometric testing for students, faculty and staff.
- E. Conduct or arrange for the appropriate selection and fitting of hearing protection.
- F. Maintain training and hearing protection records as outlined in the HEARING PROTECTION and TRAINING sections of this document.

Deans, Directors of Academic and Administrative Units and Department Heads shall:

- A. Provide fiscal and administrative resources for the implementation of the Hearing Conservation Program within their unit.
- B. Ensure that all personnel affected by occupational noise exposure receive the proper training.

Supervisors of employees who may require hearing protection shall:

- A. Contact S&C when they suspect that hearing protection may be required for a task.
- B. Attend training on the proper selection, storage, use, and maintenance of hearing protective equipment when employees they supervise are required to use such equipment.
- C. Supply the appropriate hearing protection at no cost to the employee and ensure that it is worn according to the training received.
- D. Assure that the requirements of this program are observed with respect to noise surveys, noise dosimetry, and audiometric testing, training, and record keeping.
- E. Develop a standard operating procedure (SOP), such as the one found in Appendix A of this document. The purpose of the written SOPs is to delegate responsibilities to specific personnel and to record the selection of hearing protection for specific tasks/hazards.

The employee shall:

- A. Report to the supervisor any operation or job for which they suspect that hearing protective equipment may be needed.
- B. Attend training on the hearing protection as required by this program.
- C. Use hearing protection in accordance with instruction and training received.
- D. Not use hearing protection with any deficiencies and report any deficiencies or malfunctions to a supervisor.
- E. Notify the supervisor of a noticeable change in hearing, or potential problem with the hearing protection.

The medical provider reviewing the employee's ability to wear hearing protection shall:

- A. Conduct or supervise qualified persons to conduct an audiometric testing per the OSHA Noise standard.
- B. Provide the Hearing Protection wearer and S&C with written results of the medical evaluation as it applies to the employee's ability to hear.

## V. DEFINITIONS

**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.

**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.

**Criterion sound level** - A sound level of 90 decibels.

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

**Hertz (Hz)** - Unit of measurement of frequency, numerically equal to cycles per second.

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

**Noise dose** - The ratio, expressed as a percentage, of (1) the time integral, over a stated time or event, of the 0.6 power of the measured SLOW exponential time-averaged, squared A-weighted sound pressure and (2) the product of the criterion duration (8 hours) and the 0.6 power of the squared sound pressure corresponding to the criterion sound level (90 dB).

**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.

**Representative exposure** - Measurements of an employee's noise dose or 8-hour time-weighted average sound level that the employers deem to be representative of the exposures of other employees in the workplace.

**Sound level** - Ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this regulation, SLOW time response, in accordance with ANSI S1.4-1971 (R1976), is required.

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

**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.

## VI. HAZARD EVALUATION/NOISE ASSESSMENT

The selection of appropriate hearing protection is made only after a determination has been made as to the real and/or potential exposure of the University's employees to high levels of noise. A noise assessment of the work place will be conducted; including sound level surveys and/or noise dosimetry (see Appendix C and Appendix D). S&C or their designated representative will conduct the noise survey.

## **Area Survey**

The first step in conducting a noise assessment for the hearing conservation program is to identify those areas of operation of the facility where the employee's exposure may exceed an 8-hour time-weighted average (TWA) of 85 dBA or 50 percent dose. This is accomplished using an instrument called a sound level meter (SLM) or a noise dosimeter having a SLM function. In cases of high worker mobility, significant variations in sound level, or a significant component of impulse noise make area monitoring generally inappropriate, University shall use representative personal sampling to comply with the monitoring requirements of this paragraph, unless the health and safety professional can show that area sampling produces equivalent results.

Noise levels are defined in terms of decibel (dB). The SLM must meet requirements specified in ANSI S1.4, type 2, with operating parameters that are set at A-weighted (dBA) and slow response for monitoring. The SLM must be calibrated to ensure measurement accuracy. Noise surveys should be completed annually, or when conditions change substantially.

## **Noise Dosimetry (Personal Exposure)**

The purpose of noise dosimetry is to quantify an employee's exposure to noise throughout the day. The noise dosimeter is worn by the employee and computes noise measurements such as dose, average dBA, and duration of monitoring. The dosimeter must meet requirements of ANSI SI.25-1978, which are: integration of noise measurements in the 80-140 dB range; impulse and A-weighting capabilities; and a 5 dBA exchange rate.

## **VII. MEDICAL SURVEILLANCE**

### **Audiometric Testing**

Audiometric testing is conducted to evaluate effective employee hearing at various frequencies. All employees who are enrolled in the hearing conservation program will receive audiometric testing at least on an annual basis, or more frequently if the medical provider deems it necessary. The testing will be provided at no cost to the employee.

Audiometric testing shall be conducted within 6 months of enrollment in the hearing conservation program to determine a baseline, and annually thereafter if exposure is above 85 dBA for an 8-hour TWA or 50 percent dose (OSHA action level). If a baseline has not been determined, then the first audiometric test will become the baseline. The audiometric testing will be conducted by a University designated medical facility.

Before an audiometric test is completed, the employee must spend at least 14 hours without exposure to high noise levels (workplace or personal). Hearing protectors may be used to accomplish this. After the audiometric test, the employee will be informed of the results by S&C.

Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift, as defined in the following paragraph, has occurred. This comparison may be done by a technician.

If an employee has a standard threshold shift (STS) of 10 dB or more averaged at 2000, 3000 and 4000 Hz in either ear, then he or she must be retested within 30 days and the retest will be

considered the annual audiogram. Hearing protection will also be used during the 30-day period, to attenuate any noise exposure to an 8 hour time-weighted average of 85 dB or below. 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 audiogram according to the procedure described in [Appendix F of the Occupational Safety and Health Administration Noise Standard 29 CFR 1910.95: "Calculation and Application of Age Correction to Audiograms."](#)

The medical examiner shall review the problem audiograms and determine whether there is a need for further evaluation. The University shall provide to the person performing this evaluation the following information:

- A copy of the requirements for the hearing conservation program;
- The baseline audiogram and most recent audiogram of the employee to be evaluated;
- Measurements of background sound pressure levels in the audiometric test room; and
- Records of audiometer calibrations.

After retesting, if the medical examiner determines that the threshold shift is not permanent, then the employee will be notified by his/her supervisor of the corrected audiometric results. If the medical provider determines that the employee's STS is work-related or aggravated by occupational noise exposure, then the employee (if not using hearing protectors) will be fitted with hearing protectors (see HEARING PROTECTION and Appendix F), trained in their use and care, and required to use them. If the employee is already using hearing protection he/she will be refitted and retrained in the use of hearing protection and provided with hearing protectors offering greater attenuation if necessary. The employee who has an STS must be notified in writing within 21 days of the determination by his/her supervisor.

The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the employer suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors. The employee is also 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.

All employees who are in the hearing conservation program will be responsible for notifying their supervisor if they notice a change in their hearing ability or if the hearing protection becomes uncomfortable or non-effective. This is to assure that any substantial change in the employee's hearing or hearing protection can be re-evaluated.

If an employee is exposed to noise less than an 8-hour TWA of 85 decibels, and subsequent audiometric testing indicates that a standard threshold shift is not persistent:

- S&C shall inform the employee of the new audiometric interpretation; and
- The employee may discontinue the required use of hearing protectors.

## **Audiometric Test Requirements**

Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency shall be taken separately for each year.

Audiometric tests shall be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers S3.6-1969. Pulsed-tone and self-recording audiometers, if used, shall meet the requirements specified in [Appendix C of OSHA Noise Standard 29 CFR 1910.95: "Audiometric Measuring Instruments."](#) Audiometric examinations shall be administered in a room meeting the requirements listed in [Appendix D of OSHA Noise Standard 29 CFR 1910.95: "Audiometric Test Rooms."](#)

## **Audiometric Calibration**

The functional operation of the audiometer shall be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.

Audiometer calibration shall be checked acoustically at least annually in accordance with [Appendix E of OSHA Noise Standard 29 CFR 1910.95: "Acoustic Calibration of Audiometers."](#) Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.

An exhaustive calibration shall be performed at least every two years in accordance with sections 4.1.2; 4.1.3; 4.1.4.3; 4.2; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.

## **VIII. HEARING PROTECTION**

Hearing protector selection shall be made by the employee's supervisor in consultation with S&C. The hearing protection will be made available to all workers exposed at or above the action level 85 dBA as an 8-hour TWA or 50 percent dose and at no cost to the employees.

Hearing protectors must be worn:

- When employees are exposed to noise levels that equal or exceed 85 dBA as an 8-hour TWA or 50 percent dose.
- By any employee who is exposed as an 85 dBA 8-hour TWA or 50 percent dose and who has not had a baseline audiogram established.
- By any employee who has experienced a STS.

Hearing protectors must attenuate employee exposure at least to an 8-hour TWA of 90 dBA or below. For those employees who have experienced STS, hearing protection must attenuate an employee's exposure to an 8-hour TWA of 85 dBA or below.

The employer shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. The University shall use one of the evaluation methods described in [Appendix B OSHA Noise Standard 29 CFR 1910.95: “Methods for Estimating the Adequacy of Hearing Protection Attenuation.”](#)

The adequacy of hearing protector attenuation shall be re-evaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The University shall provide more effective hearing protectors where necessary.

Hearing protection devices include:

- **Earplugs**, which consist primarily of formable plugs made of various materials such as expandable foam, glass fiber, Swedish wool, mineral down encased in polyethylene cover to prevent shredding, and wax impregnated cotton. Most of these plugs are disposable.
- **Canal Caps** seal the external opening of the ear canal. They do not plug the ear canal as earplugs do, but block the entrance of sound at the opening of the canal. The canal caps are held in place by a light band or head suspension.
- **Ear Muffs** consist of two dome-shaped cups that cover the entire external ear and seal against the side of the head with a suitable cushion or pad. The earmuff consists of four parts: the earcup (encloses the ear and is designed to deflect as much noise as possible), the sound absorbent earcup insert, the cushion (contacts the area around the ear), and the headband. See Appendix F for additional information.

## IX. TRAINING

All employees that are enrolled in the hearing conservation program will be trained by a manufacturer’s representative, S&C, or their designee.

Training shall be conducted prior to the initial use of hearing protection and refresher training will be given at least annually, or on an as need basis. When job tasks and hazards change, additional training commensurate with the new conditions must be provided to the employee.

Training must be specific for the type of hearing protection the user shall be wearing (i.e. foam plugs, canal caps, muffs, etc). Training shall include:

- The effects of noise on hearing;
- The purpose of hearing protectors; the advantages, disadvantages, and attenuation of various types of hearing protector devices; and instructions on the selection, fitting use and care.
- The purpose of audiometric testing and an explanation of the test procedures.
- Areas of the facility where noise levels are greater than or equal to 85 dBA.

The annual training must be updated to be consistent with changes in protective equipment and work processes. The training will be documented by providing a written summary of the information presented and the employees will sign and date the training documentation.

Access to information and training materials:

- The University shall make available to affected employees or their representatives copies of this standard.
- The University shall provide to affected employees any informational materials pertaining to the standard that are supplied to the University by OSHA.
- The University shall provide all materials related to the employer's training and education program pertaining to this standard to OSHA or Illinois OSHA upon request.

## **X. RECORD-KEEPING**

The employing department is responsible for the primary recordkeeping of the hearing conservation program, according to the specific requirements listed below:

The University shall establish and maintain accurate records according to the OSHA Access to Employee Exposure and Medical Records Standard ([29 CFR 1910.1020](#)) and the OSHA Noise Standard ([29 CFR 1910.95](#) or [29 CFR 1926.52](#)) for each employee required to be in the University hearing conservation program. The record shall include the following:

- Exposure measurements.
- Audiometric test results, including:
  - Name and job title of the employee in the hearing conservation program.
  - A copy of all the latest noise exposure assessments.
  - Audiometric testing results (baseline and all related correspondence) and date performed.
  - The examiner's name and the physician's written opinion on any special medical examination related to the hearing conservation program.

The University shall maintain accurate records of the measurements of background sound pressure levels in audiometric test rooms.

Records shall be retained as follows:

- Noise exposure assessment – 2 years.
- Audiometric test records – duration of employment.

All records required by this section shall be provided upon request to employees, former employees, representatives designated by the individual employee, and OSHA or IDOL. The provisions of 29 CFR 1910.1020 (a)-(e) and (g)-(i) apply to access to records under this section.

**Hearing Conservation Program Standard Operating Procedures for:**

\_\_\_\_\_  
[*Department*]

It is the policy of the above mentioned unit to comply with the University of Illinois at Urbana-Champaign (University) hearing conservation program. The purpose of this document is to complement the University hearing conservation program with site-specific written standard operating procedures.

**Program Administration**

The University recognizes that employee supervisors are not necessarily experts in the area of hearing protection. However, as outlined in Section V/B-1.3 of the Campus Administrative Manual, it is the Supervisor’s responsibility to assure that required equipment and personal protective devices are provided, maintained and used by those they supervise. S&C and other qualified personnel will assist supervisors and employees in fulfilling these obligations upon request.

The following individual has complete responsibility for the administration of hearing protection in the above mentioned unit. It is the responsibility of this person to supervise the use of hearing protection and to ensure that it is used when required and in the manner in which the wearer has been trained.

\_\_\_\_\_  
[*name*]

\_\_\_\_\_  
[*title*]

**Hearing Protector Selection**

The hearing protectors selected for use by this unit are indicated below. [*Types of Hearing Protection include: Earplugs, Canal Caps, and Ear Muffs – see Appendix G for more information*]

\_\_\_\_\_  
(Hearing Protection Type)

\_\_\_\_\_  
Area that exceeds 85 dBA for which hearing protection is required

\_\_\_\_\_  
(Hearing Protection Type)

\_\_\_\_\_  
Area that exceeds 85 dBA for which hearing protection is required

\_\_\_\_\_  
(Hearing Protection Type)

\_\_\_\_\_  
Area that exceeds 85 dBA for which hearing protection is required

\_\_\_\_\_  
(Hearing Protection Type)

\_\_\_\_\_  
Area that exceeds 85 dBA for which hearing protection is required

**Audiometric Testing/Medical Evaluations**

A determination of the capability of each individual to hear appropriately will be conducted by a licensed or certified audiologist, otolaryngologist, or other physician or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation. The provider is:

\_\_\_\_\_

Copies of the Audiometric Test for the employees are found in the employees' personnel file in the following location:

\_\_\_\_\_

**Hearing Conservation Training and Fitting Instructions for Hearing Protection**

Records of training and fitting instructions for the individuals in this unit who will be wearing protectors can be found in the following location:

\_\_\_\_\_

| Noise Assessment  | Yes                      | No                       |
|---|--------------------------|--------------------------|
| 1. Has an area survey (using a Sound Level Meter, SLM) been conducted to identify areas where a worker 8-hour (time-weighted-average, TWA) exposure may equal or exceed 85 dBA? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Has noise dosimetry (using a dosimeter) been conducted on employees in these areas?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. When employee's noise exposure equals or exceeds 85 dBA are they included in the hearing conservation program, which includes:   |                          |                          |
| a. Annual audiometric testing   | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Written standard operating procedures  | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Annual training  | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Record keeping procedures  | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Noise monitoring at least every 2 years  | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Has each employee exposed at or above an 8-hour TWA of 85 decibels (85 dBA) been notified of the monitoring results?   | <input type="checkbox"/> | <input type="checkbox"/> |
| Written Standard Operating Procedures   |                          |                          |
| 5. Does the unit have written SOPs?   | <input type="checkbox"/> | <input type="checkbox"/> |
| Audiometric Testing/Medical Surveillance  |                          |                          |
| 6. Has an audiometric testing program been established/maintained and provided at no cost to all employees who are enrolled in the Hearing Conservation Program?                | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Do employees have at least 14 hours without exposure to workplace noise prior to a baseline audiogram? Hearing protection may be used to accomplish this.                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. When an employee's audiogram indicates there has been a STS between the annual and baseline audiogram:   |                          |                          |
| a. Has the employee been notified within 21 days?   | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Has the retest been scheduled within 30 days?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. When a physical determines that the STS is work related or aggravated by occupational noise exposure, are the following steps completed?                                     |                          |                          |
| a. Are employees who are not wearing hearing protectors fitted with hearing protection, trained in use and care, and required to wear them?                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Are employees who already use hearing protection refitted with protectors with greater attenuation (at least to 85 dBA) and trained in their care and use?                   | <input type="checkbox"/> | <input type="checkbox"/> |
| Hearing Protection  |                          |                          |
| 10. Is hearing protection made available to all employees exposed to an 8-hour TWA of 85 dB or greater at no cost to the employee?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Is hearing protection required and the use enforced for area's operations that exceed 85 dBA as an 8-hour TWA?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Are hearing protectors replaced as necessary?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Is training provided in the use and care of the hearing protectors provided to the employees?   | <input type="checkbox"/> | <input type="checkbox"/> |

| <b>Training Program</b>  | <b>Yes</b>               | <b>No</b>                |
|--|--------------------------|--------------------------|
| 14. Is a training program given for all employees who are exposed at or above the action level and repeated annually?                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Is it assured that each employee is informed of the following:   |                          |                          |
| a. The effects of noise on hearing?  | <input type="checkbox"/> | <input type="checkbox"/> |
| b. The purpose, advantage, disadvantage, and attenuation of various types of hearing protection and instructions on selection, fitting, use, and care? | <input type="checkbox"/> | <input type="checkbox"/> |
| c. The purpose of audiometric testing and an explanation of the test procedures?   | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Access to Information and Training Materials</b>  |                          |                          |
| 16. Is a copy of the noise standard posted and available to affected employees?  | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Record-Keeping</b>  |                          |                          |
| 17. Are accurate records of all employee exposures, training, and audiometric testing data maintained?   | <input type="checkbox"/> | <input type="checkbox"/> |

|                                |  |              |                                |                                |                                |
|--------------------------------|--|--------------|--------------------------------|--------------------------------|--------------------------------|
| Employee name:                 |  | UIN/Badge:   |                                | Work Location:                 |                                |
| Job Title:                     |  | Dosimeter #: |                                | Calibration Date:              |                                |
| Dosimetry Date:                |  | Time on:     | Time off:                      |                                |                                |
| Sampled by:                    |  |              |                                |                                |                                |
| Hearing Protection Worn?       | <input type="checkbox"/> Yes <input type="checkbox"/> No | Type:        | <input type="checkbox"/> Plugs | <input type="checkbox"/> Muffs | <input type="checkbox"/> Other |
|                                |  | NRR:         |                                |                                |                                |
| Recommended Hearing Protection |  |              | <input type="checkbox"/> Plugs | <input type="checkbox"/> Muffs | <input type="checkbox"/> Other |
|                                |  | NRR:         |                                |                                |                                |
| Other PPE:                     |  |              |                                |                                |                                |
| Building/Location:             |  |              |                                |                                |                                |
| Job activities/comments:       |  |              |                                |                                |                                |
| Results                        | Time-weighted Average:                                   |              | Percent Dose: *                |                                |                                |

\* Employees are required to be enrolled in the Hearing Conservation Program if their noise dosage is 50% or greater (which is equivalent to 85 dBA for an 8-hour exposure).

**Conclusion:**

- Employee needs to be enrolled in the University Hearing Conservation Program (HCP).
- Further sampling needs to be conducted to determine if employee needs to be in HCP.
- Employee does not need to be enrolled in the HCP at this time. No further action required.

If the employee needs to be enrolled in the Hearing Conservation Program, the following steps need to be taken.

1. **Audiometric testing.** An initial baseline test must occur within 6 months of the issuance of this report. Testing is then repeated annually thereafter. New employees should also participate in an initial baseline within 6 months of employment.
  - a. Department of Speech and Hearing Science provides audiometric testing. Appointments should be scheduled with this department.
  - b. When the testing is done: 14-hours before testing, the employee must wear hearing protection or avoid exposure to workplace noise. They also must avoid high levels of non-occupational noise.
2. **Training.** Initial and annually thereafter is required. The Department of Speech and Hearing Science conducts this training.
3. **Hearing Protection.** At least two different styles of hearing protection should be available for fitting and selection. These will be provided at no cost to the employee. The supervisor is responsible for ensuring that employees wear the hearing protection devices.
4. **Access to information.** Copies of the OSHA Standard 1910.95 “Occupational Noise Exposure” should be available to employees and a copy should be posted in the shop.

For further information, contact Safety and Compliance at 265-9828.

Name \_\_\_\_\_ Building \_\_\_\_\_ Date \_\_\_\_\_

UIN \_\_\_\_\_ Job Description \_\_\_\_\_

From: The Division of Safety and Compliance

The noise dosimetry for \_\_\_\_\_ indicates that noise exposure is \_\_\_\_\_ [dBA] as a time weighted average for an eight hour day.

\_\_\_\_\_ is required to be in University Hearing Conservation Program.

If you have any questions, please call (217) 265-9828 for additional information.

|  |                              |                             |                              |                             |                              |                             |                              |                             |                              |                             |
|--|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Building: _____ Room/Location: _____   |                              |                             |                              |                             |                              |                             |                              |                             |                              |                             |
| Area Posted: <input type="checkbox"/> Yes – Single <input type="checkbox"/> Yes – Double <input type="checkbox"/> No      Hearing Protection In Use: <input type="checkbox"/> Yes – Single <input type="checkbox"/> Yes – Double <input type="checkbox"/> No |                              |                             |                              |                             |                              |                             |                              |                             |                              |                             |
| <b>Sound Level Meter Results</b>   |                              |                             |                              |                             |                              |                             |                              |                             |                              |                             |
| Sample #   |                              |                             |                              |                             |                              |                             |                              |                             |                              |                             |
| Source Description   |                              |                             |                              |                             |                              |                             |                              |                             |                              |                             |
| Measurement Location   |                              |                             |                              |                             |                              |                             |                              |                             |                              |                             |
| Noise Pattern<br><small>C = Continuous<br/>IN = Intermittent<br/>IM = Impulse/Impact</small>   | C<br>IN<br>IM                |                             |
| Noise Source Labeled   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Noise Radius (ft)  | at 85 dBA                    |                             |
|  | at >96 dBA                   |                             | at >96 dBA                   |                             | at >96 dBA                   |                             | at >96 dBA                   |                             | at >96 dBA                   |                             |
|  | at 140 dB(P)                 |                             | at 140 dB(P)                 |                             | at 140 dB(P)                 |                             | at 140 dB(P)                 |                             | at 140 dB(P)                 |                             |
|  | at 165 dB(P)                 |                             | at 165 dB(P)                 |                             | at 165 dB(P)                 |                             | at 165 dB(P)                 |                             | at 165 dB(P)                 |                             |
| Meter Response<br><small>F = Fast<br/>S = Slow<br/>I = Impulse/Impact</small>  | F<br>S<br>I                  |                             |
| Result   | dBA                          |                             |
|  | dB Peak                      |                             | dB Peak                      |                             | dB Peak                      |                             | dB Peak                      |                             | dB Peak                      |                             |

Comments: \_\_\_\_\_

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Diagram

From: \_\_\_\_\_

Date: \_\_\_\_\_

To: \_\_\_\_\_

The audiometric test performed on \_\_\_\_\_ has been reviewed and compared to your baseline audiogram of \_\_\_\_\_ done by the medical consultants of the testing firm \_\_\_\_\_. The examination results indicate that there has been an OSHA-defined Standard Threshold Shift in your [*right/left/both ears*] (an average shift of 10 dB or more at 2000, 3000, and 4000 HZ). As a result, the following corrective action(s) may be implemented:

- A. If you are not currently wearing hearing protectors, you will be fitted, trained in their use and care, and required to use them.
- B. If you are currently wearing hearing protectors, you will be refitted, retrained in their use, and provided with hearing protectors that attenuate noise exposure to 85 dBA or below.
- C. You are strongly encouraged to wear hearing protection in high noise areas outside of work.

Noise monitoring data for you indicates that noise exposures are \_\_\_\_\_ [*exposure data in dBA*] as a time weighted average for an eight hour day.

Please see your supervisor to arrange a meeting to review and sign your audiogram as well as discuss possible corrective actions.

If you have any other questions, please contact Safety and Compliance at (217) 265-9828.

  

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## **Expandable foam plugs**

These plugs are made of a formable material designed to expand and conform to the shape of each person's ear canal. Roll the expandable plugs into a thin, crease-free cylinder. Whether you roll plugs with thumb and fingers or both hands does not matter, but do not roll between your palms as this causes distortion and creases. What is critical is the final result – a smooth tube thin enough so that about half the length will fit easily into your ear canal. Some individuals, especially people with small ear canals, have difficulty rolling typical plugs small enough to make them fit. A few manufacturers now offer a small-size expandable plug.

## **Pre-molded, reusable plugs**

Pre-molded plugs are made from silicone, plastic or rubber and are manufactured as either “one-size-fits-most” or are available in several sizes. Many pre-molded plugs are available in sizes for small, medium, or large ear canals.

A critical tip about pre-molded plugs is that a person may need a different size plug for each ear. The plugs should seal the ear canal without being uncomfortable. This takes trial and error of the various sizes. Directions for fitting each model of pre-molded plug may differ slightly depending on how many flanges they have and how the tip is shaped. Insert this type of plug by reaching over your head with one hand to pull up on your ear. Then use your other hand to insert the plug with a gentle rocking motion until you have sealed the ear canal.

Advantages of pre-molded plugs are that they are relatively inexpensive, reusable, washable, convenient to carry, and come in a variety of sizes. Nearly everyone can find a plug that will be comfortable and effective. In dirty or dusty environments, you do not need to handle or roll the tips.

## **Canal caps**

Canal caps often resemble earplugs on a flexible plastic or metal band. The earplug tips of a canal cap may be a formable or pre-molded material. Some have headbands that can be worn over the head, behind the neck, or under the chin. Newer models have jointed bands, increasing the ability to properly seal the earplug.

The main advantage canal caps offer is convenience. When it is quiet, employees can leave the band hanging around their necks. They can quickly insert the plug tips when hazardous noise starts again. Some people find the pressure from the bands uncomfortable. Not all canal caps have tips that adequately block all types of noise. Generally, the canal cap tips that resemble stand-alone earplugs seem to block the most noise.

## **Earmuffs**

Earmuffs come in many models designed to fit most people. They work to block out noise by completely covering the outer ear. Muffs can be “low profile” with small ear cups, or large to hold extra materials for use in extreme noise. Some muffs also include electronic components to help users communicate or to block impulse noises.

Workers who have heavy beards or sideburns or who wear glasses may find it difficult to get good protection from earmuffs. The hair and the temples of the glasses break the seal that the earmuff cushions make around the ear. For these workers, earplugs are best. Other potential drawbacks of earmuffs are that some people feel they can be hot and heavy in some environments.

## **Miscellaneous devices**

Manufacturers are receptive to comments from hearing protection users. This has led to the development of new devices that are hybrids of the traditional types of hearing protectors. ([Visit NIOSH searchable compendium of hearing protectors](#)) Because many people like the comfort of foam plugs, but do not want to roll them in dirty environments, a plug is now available that is essentially a foam tip on a stem. You insert this plug much like a pre-molded plug without rolling the foam.

Scientists are developing earmuffs using high-tech materials to reduce weight and bulk, but still effectively block noise. On the horizon may be earplugs with built-in two-way communication capability.

Still, the best hearing protector is the one that is comfortable and convenient and that you will wear every time you are in an environment with hazardous noise.

## Document Revisions

April 29, 2016

Review document, update forms, revise page numbers, add Sound Level Survey form