Western University

Hearing Protection Program

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decibels (dBA). Another important type of noise survey is octave band frequency analysis. This type of analysis assists in the selection of potential noise control measures.

Nuisance noise:

Nuisance noise is that noise which may be irritating or annoying to some people but it is not loud enough to be hazardous or associated with noise-induced hearing loss. Nuisance noise is not covered by the Western's noise control and Hearing Protection Program. Given the subjective nature of nuisance noise, concerns of this type will be assessed separately, as required.

Time-weighted average:

The time-weighted average (TWA) represents the average (noise) exposure measured over a typical 8-hour workday.

ACGIH: American Conference of Governmental Industrial Hygienists
CSA: Canadian Standards Association
HCP: Hearing Conservation Program
IAPA: Industrial Accident Prevention Association
OHS: Occupational Health and Safety
CAN3-Z107.4-M86: Pure Tone Air Conduction Audiometers for Hearing Conservation and for Screening.

3.0 Application

This standard applies to all divisions, departments and facilities within Western and its agents including any contractors within their employ, such that, all personnel within these groups dealing with noise hazards shall be informed of the contents of this program. A contractor's participation is coordinated through Western's Project Coordinator who is responsible for the contractor.

3.1 Scope & Criteria

Noise hazards at UWO form the primary focus of this program. Position Hazard Communication Form (PHCF) will be used as a key source for identifying, evaluating and controlling noise hazards. Controls will include procedures, communication, training, and audiometric testing as required.

The HPP will ensure that noise hazards are identified assessed for risk and that controls are implemented and maintained on a continual basis. Accordingly, the core activities of the HPP are to:

- Identify and assess the risk associated with new noise sources, existing noise sources and noise associated with occupational tasks.
- Conduct personal and area noise assessments for normal and non-routine activities such as shutdowns and turnarounds.
- Eliminate or reduce noise sources where practical.

- Specify the purchasing standards for hearing protective equipment, ensure employees using hearing protection are trained in its proper use and ensure that appropriate levels of hearing protection are available when required.
- Coordinate medical surveillance through Workplace Health to ensure appropriate audiometric testing is conducted as identified through the Position Hazard Communication Form.
- Communicate and train employees on the HPP and associated procedures.
- Maintain appropriate records to monitor effective execution of the program.
- Monitor and report on the effectiveness of the program to the Director of OHS.
- Take corrective actions as necessary.

Any employee is considered noise-exposed if they have the potential to develop occupational noise-induced hearing loss. Regular exposure to sound levels greater than a time-weighted average of 85 dBA or an "equivalent" noise exposure (using a 3 dB exchange rate), as listed in Table 1 is associated with the development of noise-induced hearing loss.

It is important to recognize that some individuals are more susceptible to the effects of noise and may be at risk of developing noise-induced hearing loss when regularly exposed to sound levels lower than 85 dBA. For this reason, University employees entering locations with noise levels of 85 dBA or above will be required to wear hearing protection and/or follow instructions on posted signs; all employees who work in such situations should be informed and offered appropriate hearing protection.

In addition, any employee is considered to be “noise-exposed” if they are regularly exposed to impact noise at a level and frequency exceeding the values given in Table 2.

3.2 Area Noise Levels

An area or location is considered a noise hazard if sound levels are regularly at, or above, 85 dBA.

TABLE 1: EQUIVALENT NOISE EXPOSURES

Duration per 24 hour

TABLE 2: IMPACT NOISE

Sound Level (dB)	Maximum Number of Impacts/ 8 hour Day

4.2 Employees

Employees exposed to hazardous noise levels are responsible for:

1. attending Hearing Conservation Training as required;
2. participating in the audiometric screening program;
3. using and caring for hearing protective devices where these devices are required; and
4. Reporting noise concerns to the Supervisor.

4.3 Occupational Health and Safety

Occupational Health and Safety is responsible for:

1. defining the Noise Control and Hearing Protection Program;
2. conducting noise surveys and dosimetry;
3. providing technical services and advice regarding control measures and hearing protection;
4. providing appropriate hearing conservation training and education;
5. requesting audiometric screening and maintaining confidential personal records;
6. reporting noise-induced hearing loss cases to the WSIB Coordinator; and
7. Auditing the program.

5.0 Program Administration

- The effectiveness of the HPP will be assessed on a 12-month cycle by reviewing the collective results of the employees' annual audiograms

CSA Z107.56-94 Procedures for the Measurement of Occupational Noise Exposure

CSA Z94.2-02 Hearing Protection Devices - Performance, Selection, Care, and Use

Z107.0 Definitions of Common Acoustical Terms Used in CSA Standards

CAN/CSA-Z107.6 Pure Tone Air Conduction Threshold Audiometry for Hearing Conservation

Appendix 1

Hearing Conservation Education

The following groups of employees shall receive training related to Hearing Conservation:

- Those who routinely work in the Power Plant
- Others as identified by Occupational Health and Safety and Supervisors
- Employees who are required to enter high noise areas.

Training will be delivered through a standard education package offered by the OHS and when an employee is given the results of his or her annual audiogram.

The content of the training packages is a follows:

EDUCATION PACKAGE:

- Description of UWO HPP
- The hazards of noise
- How hearing loss occurs
- The purpose and limitations of audiometric testing
- The purpose and limitations of hearing protectors
- The proper way to wear hearing protectors
- Characteristics of noise in employee's specific working environment and how such noise could affect hearing

INDIVIDUAL COUNSELLING DURING COMMUNICATION OF AUDIOGRAM RESULTS:

- The importance of wearing hearing protectors
- How they should be worn.
- The results of the employee's audiogram and how that relates to the maintenance of the employee's hearing

Appendix 1: Hearing Conservation Education (continued).

Classification of Audiograms:

Each baseline audiogram will be classified into one of three categories. These categories are:

1. Normal (N)
2. Early Loss Index (ELI)
3. Abnormal (AB)

A brief explanation of each of these categories is given below.

1. Normal (N):

Where threshold data does not exceed 25 dBA hearing threshold level (HTL).

2. Early Loss Index (ELI):

The presence of a 15 dBA notch at 3000, 4000, and/or 6000 Hz when comparing the threshold to neighbouring frequencies. The deepest part of the notch should display a threshold of 30 dBA HTL or greater.

3. Abnormal (AB):

a. Where thresholds exceed 25 dBA at 500, 1000, or 2000 Hz.

b. The difference between better and poorer ear exceeds an average of 15 dBA at 500, 1000, 2000 Hz or exceeds an average of 30 dBA at 3000, 4000, and 6000 Hz.

c. A loss of at least 30 dBA when compared to the preceding frequency. The loss can be any frequency above 2000 Hz.

d. 30 dBA HTL or greater bilaterally from 3000 to 8000 Hz with no evidence of a notch.

Appendix 2: Audiometry (continued)

Classification of Threshold Shifts:

The results of periodic audiometric tests will be used according to a specified protocol for the purpose of detecting changes in hearing (threshold shifts).

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Appendix 3

Purchasing Requirements

Purchasing Requirements for Hearing Protective Devices

As per CSA Z94.2-02, manufactures need to provide the required information as detailed in the first section of this appendix and preference shall be given to manufactures that can provide additional information as detailed in the latter section of this appendix.

Required Information
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