

# Duquesne University

## HEARING CONSERVATION PROGRAM

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Prepared by: Environmental Health and Safety Department

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### **Purpose**

Noise-induced hearing loss is a significant issue for people exposed to hazardous noise levels in the workplace or at home. Loss of hearing may occur from exposure to impulse or impact noise, in addition to continuous or intermittent noise. The loss may be temporary or may become permanent via repeated, unprotected exposure to intense noise. Initial deterioration of hearing may not be apparent to the individual. By the time there is subjective awareness of the loss, the impairment may be substantial and irreversible. Hearing loss due to noise exposure is almost entirely preventable.

This program is designed to provide the maximum protection for all employees who may be exposed to high noise levels as well as to ensure compliance with 29 CFR 1910.95 (Occupational Noise Exposure), the noise exposure standard of the Occupational Safety and Health Administration.

Guidelines are also provided for the selection, use, and purchase of hearing protection that will adequately protect all administration, staff, faculty, and students who may be exposed to high noise levels at Duquesne University.

### **Scope**

This program applies to all employees and contracted/sub-contracted personnel who work or are authorized to work at the University.

### **Responsibilities**

Administration - Duquesne University has the overall responsibility for providing a place of employment free of recognized hazards and unsafe conditions, as well as complying with federal, state, and local standards and regulations.

The Deans, Directors or Department Heads - Have the overall responsibility of ensuring that all pertinent personnel are provided with the required equipment and resources to perform work safely in high noise level areas. They must also ensure that proper training is made available to each worker performing work in high noise level areas.

Environmental, Health and Safety - Has the responsibility of ensuring local, state, federal and insurance company compliance with the Hearing Conservation Program and the responsibility for guidance and technical expertise needed to oversee the program. Responsibilities also include providing training for affected personnel.

Department Supervisor (whose employee(s) engage in high noise level work) - Ensures that all aspects of this Program are implemented and hazards are controlled so not to present a hazardous exposure to

University employees, students and visitors. He/She also has the responsibility to insure the employee(s) designated to perform work in high noise level areas utilizes the necessary procedures and equipment to minimize that employee's own exposure to the hazards generated. Responsibility also includes ensuring that all equipment is maintained in a safe operational manner.

University Employee(s) (engaged in work in high noise level areas) -Are responsible for following this Program and implementing controls that will eliminate or greatly reduce the hazards generated by their work for the protection of themselves, University employees, students and visitors. Personnel using tools or equipment are also responsible for ensuring that equipment is in proper working order

Project Supervisor(s) for Outside Contractor(s) - Are responsible for ensuring outside contractors and sub-contractors involved in work in high noise areas have and follow a Hearing Conservation Program or comply with the provisions of this Program.

### **General Requirements**

When employees are exposed to sound levels exceeding those in Appendix A – Permissible Noise Exposure Levels, administrative and engineering controls shall be implemented. If administrative or engineering controls are not effective or available, personal protective equipment shall be utilized to reduce the sounds levels to those listed in Appendix A or lower.

Exposure to impact or impulse noise shall not exceed 140 dBA. If the variations in the sound levels are one second or less apart, the noise is to be considered continuous.

The employee shall endeavor to avoid high levels of non-occupational noise 14 hours before an audiometric examination.

University employment practices require that all individuals hired for Union positions have initial physicals and baseline audiograms at no cost to the employee. Baseline audiograms are used to determine threshold shifts in employees while working at the University. After a baseline audiogram is performed, each employee exposed to noise levels at or above 85 dBA time weighted average shall have an annual audiometric examination and evaluation.

### **Audiometric Examination and Evaluation**

Each employee's audiogram shall be compared to their baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred.

A standard threshold shift (STS) is defined as a change in the hearing threshold of an average of 10 decibels or more at 200, 3000, and 4,000 Hertz in either ear when compared to the baseline audiogram.

If a STS has occurred, the employee may be retested within 30 days and the results of the retest may be considered the annual audiogram.

A physician, audiologist, or otolaryngologist shall review the problem audiogram and determine if there is a need for further evaluation.

The employee shall be notified in writing within 21 days of the determination of a STS.

Unless a physician determines that the STS is not work related or aggravated by occupational noise exposure, the following steps shall be taken upon discovering a STS:

1. Employees not using hearing protection shall be fitted with hearing protection, trained on its use, and required to use it;
2. Employees already using hearing protection shall be refitted with protection offering greater attenuation if necessary and retrained in its use;
3. An employee will be referred for a clinical examination or re-evaluation if the use of hearing protection causes or aggravates a medical pathology of the ear; and
4. An employee shall be informed of the need for an otological examination if the medical pathology of the ear is unrelated to the use of hearing protection.

The employee shall be notified if subsequent testing indicates that the STS is nor persistent.

An annual audiogram shall be substituted for the baseline audiogram when the STS is determined to be persistent by the audiologist, otolaryngologist, or physician. An annual audiogram shall also be substituted if the baseline audiogram when it displays significant improvement over the baseline.

### **Engineering Control**

Engineering control shall be the primary means to protect personnel from hazardous noise exposure. All practical design approaches to reduce noise levels should be explored and utilized to reduce continuous noise levels to below 85 dBA and impulse noise levels to below 140 dBA or the greatest extent possible. If, during the design stage, the known or suspected noise levels are expected to exceed the current maximum allowable limits, the design professional-in-charge will document the findings and forward them to EH&S for retention

New equipment being considered for purchase should have the lowest noise emission levels technologically and economically feasible and compatible with OSHA and EPA requirements.

Acoustics shall be included in the specifications and plans for all new facilities and for all renovation projects, with the objective to ensure, to the greatest extent possible, an A-weighted sound level of less than 85 dBA at all locations in which University personnel may be present during normal operations.

### **Noise Monitoring**

Hazardous noise areas will be identified by noise measurement conducted by EH&S. The areas will be resurveyed within 30 days of any modification affecting the noise level. At least once per year, EH&S will conducted a walk through survey of areas identified. If significant changes from the previous survey are identified, the area will be resurveyed.

All areas or equipment which produces sound pressure levels in excess of 85 dBA or 140 dBA impulse/impact shall be posted with signs and/or decals.

### **Hearing Protection**

Hearing protection shall be made available and shall be worn by all employees exposed to an 8-hour time weighted average exposure of 85 dBA or greater. This also includes those employees who have experienced a STS and those employees who have yet to receive a baseline audiogram.

Employees required to use hearing protection shall select protection from the variety of devices provided by the University. The hearing protection must provide attenuation to at least an 8-hour time weighted average of 90 dBA.

The attenuation provided by hearing protection for employees who have experienced a STS must be 85 dBA or below.

### **Training**

All employees exposed to noise at a time weighted average of 85 dBA or greater shall participate in a hearing conservation training program that shall include:

1. The effects of noise upon hearing
2. The fitting, use, care, and purpose of hearing protection
3. The purpose of audiometric testing and an explanation of the test procedure

### **Recordkeeping**

EH&S shall maintain a record of all employee exposure measurements. These records will be maintained for a period of two years.

Audiometric tests shall be retained for the duration of the employee's employment. These records shall include:

1. Name and job classification of the employee
2. Date of the audiogram
3. The examiner's name
4. Date of the last acoustic or exhaustive calibration of the audiometer
5. Employee's most recent noise exposure assessment

### **Program Evaluation**

EH&S shall evaluate this program on an annual basis.

## Appendix A: Permissible Noise Exposures

<b>Duration (Hours)</b>	<b>Sound Level A-Level/Slow Response</b>
32	80
16	85
8	90
4	95
2	100
1	105
0.5	110
0.25	115
0.125	120
0.063	125
0.031	130