****

**HEARING CONSERVATION PROGRAM**

[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjwxqz7wcbPAhULWz4KHYOUDSoQjRwIBw&url=http://radiocompany.co.uk/trends-in-hearing-protection/&psig=AFQjCNHiX5REBa0TttEjT5TwbGzW7AWHeQ&ust=1475854868859876)

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**1.0 Purpose**

The University of Delaware has determined that employees, and in certain cases graduate and undergraduate students (employed by the University), in various departments may be exposed to hazardous noise levels during routine and emergency operations.

The purpose of this program is to ensure that all University of Delaware personnel are protected from exposure to elevated noise as prescribed in the Occupational Safety and Health Administration’s (OSHA) Noise Standard 29 CFR 1910.95.

The University of Delaware’s Hearing Conservation Program is designed to protect employees

from hearing loss caused by uncontrolled exposure to elevated noise levels by reducing noise

exposures and providing appropriate hearing protection where this noise cannot be controlled.

The program includes the identification and control of hazardous noise within locations

owned/operated by the University through the use of engineering and administrative controls

combined with the selection and use of hearing protection. It also details the areas of

responsibility for deans, department chairs, managers, supervisors, and employees.

Additionally, the program includes requirements for noise exposure surveys, audiometric

testing, training in the selection and use of hearing protection, recordkeeping and program

evaluation.

**2.0 Scope and Application**

This program applies to all employees whose noise exposure levels equal or exceed an 8-hour

time-weighted average (TWA) noise level of 85 dBA. All employees are required to follow

the minimum procedures outlined in this program. Any deviations from this program must be

immediately brought to the attention of the Program Administrators which are the Director and

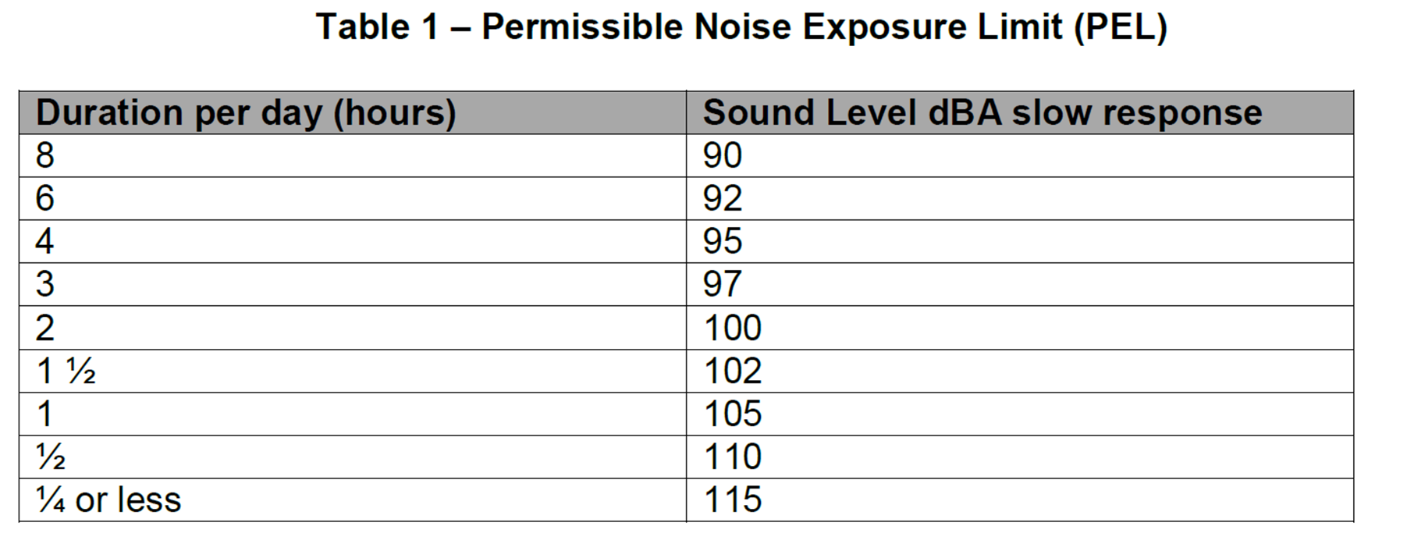
Assistant Director for the Department of Environmental Health and Safety.

The program shall also apply to those employees who are exposed to noise in excess of the

OSHA Permissible Exposure Limits (PEL) outlined in the table below. When feasible

engineering and/or administrative controls do not reduce the noise level equal to or below these

PEL’s, proper hearing protection devices must be used.

  
Excessive noise exposure can cause both temporary and permanent changes in hearing sensitivity. Repeated exposures over time can result in hearing loss, physical and psychological disorders, interference with the detection of warning sounds, disruption of job performance, and more importantly, interference with speech and communication.

**3.0 Responsibilities**

The overall responsibility to develop and implement occupational health and safety programs for the university falls with the Department of Environmental Health & Safety (DEHS). Although it is the overall responsibility of DEHS to develop this program, it is ultimately up to each department’s deans, directors, chairs, managers and supervisors to ensure that employees are provided the vital support and means to adequately carry out the provisions of each program and achieve regulatory compliance with all OSHA requirements. Responsibilities of DEHS related to the UD Hearing Conservation program include:

(1) Develop, implement and administer the University of Delaware Hearing Conservation

Program and written plan;

(2) Provide the technical expertise and equipment necessary to identify work areas and

equipment within University of Delaware (UD) facilities where noise levels equal or exceed

85 dBA;

(3) Provide the technical expertise and equipment necessary to identify, through personnel

monitoring, UD employees whose noise exposure levels equal or exceed an 8-hour Time-

Weighted Average (TWA) of 85 dBA;

(4) Periodically re-monitor identified at-risk employees;

(5) Resurvey work areas and equipment when notified that noise levels may have changed due to

facility or equipment modification;

(6) Identify potential high noise areas or equipment during routine building activities and

measure sound levels to determine the need for additional monitoring or protective

equipment;

(7) Recommend appropriate type(s) of hearing protective devices necessary to protect

employees' hearing;

(8) Train employees on mandatory elements of the UD Hearing Conservation Program;

(9) Provide recommendations concerning noise control measures including engineering controls

and administrative controls; and

(10)Maintain records of noise measurement and employee training.

Department deans, directors, chairs, managers and supervisors are responsible for ensuring that the Hearing Conservation Program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, managers and supervisors must also ensure that the program is understood and followed by the employees under their charge.

Directors, managers and supervisors will maintain surveillance of work conditions in all places where employees for whom they are directly responsible work, as well as employee exposures in order to determine if any additions to, or changes in, hearing protection use requirements are needed. Directors, managers and supervisors shall promptly notify employees of changes whenever they are needed. Duties of the manager and supervisor include:

(1) Ensure that employees under their supervision (including new hires) have received

appropriate training and medical surveillance;

(2) Determine appropriate type(s) of hearing protective devices necessary to protect

employees' hearing;

(3) Ensure the availability of appropriate hearing protective devices;

(4) Monitor and enforce the use of hearing protective devices when required and ensure

only those properly trained and medically evaluated employees use the devices;

(5) Continually monitor work areas and operations to identify noise hazards; and

(6) Coordinate with the Program Administrator on how to address hearing hazards or

other concerns regarding the program.

Employees are responsible for:

(1) Using safe work practices;

(2) Wearing and maintaining appropriate hearing protective devices as instructed while

performing job functions;

(3) Attending annual training on noise and hearing protection;

(4) Participating in annual audiometric testing;

(5) Using only those brands/types of hearing protection devices which are appropriate for

the noise exposure, and for which the employees have been trained and fitted;

(6) Reporting to their supervisor changes in the workplace or “noisy” conditions; and

(7) Complying with all provisions of the Hearing Conservation Program.

Employees with periodic exposure to high noise and whose TWA noise levels are below 85 dBA must:

(1) Wear and maintain hearing protective devices as instructed; and

(2) Report to their supervisor any changing conditions that may impact personal noise

exposures.

Evidence is well established that worker exposure to noise of sufficient intensity and duration can result in permanent hearing damage. Noise-induced hearing loss rarely results from a single exposure; it can progress unnoticed over a period of years. Early noise-induced hearing loss occurs at the higher frequencies where the consonant portion of speech occurs, making communication difficult.

The Occupational Safety & Health Administration (OSHA) Noise Standard (29 CFR 1910.95) requires employers to:

(1) Monitor facilities and employees to determine noise overexposure situations;

(2) Develop and implement a written hearing conservation program that identifies the

methods used to comply with regulatory requirements;

(3) Implement an audiometric testing program for employees with high noise exposures

to determine if exposure impacts hearing ability;

(4) Provide appropriate hearing protection to employees with high noise exposures if

other methods of noise control are not feasible or during installation of such controls;

(5) Provide annual training for employees with high noise exposures; and,

Maintain medical and monitoring records pertaining to the hearing conservation

program.

**4.0 Hearing Conservation Program Elements**

4.1 Monitoring

In order to effectively control exposure to high level of noise it is necessary that the noise be accurately measured according to standard procedures, and that the measurements be properly evaluated against accepted criteria.

The monitoring of employees for noise exposure is made up of two parts, area and personal monitoring. Area measurements are generally obtained first. If noise levels approach or exceed prescribed levels, personal monitoring using dosimeters is then performed. Affected employees or their representatives shall be provided with an opportunity to observe any noise monitoring conducted.

**4.1.1** *Area Measurements:*

In an area survey, measurements of noise levels are documented (refer to Appendix A) using a sound level meter to identify work areas where employees' exposures may be above the action level; thus requiring more thorough exposure monitoring. Area monitoring is conducted using a calibrated sound level meter set to the A scale, slow response. Within the area of interest, several different locations are typically measured. Measurement locations might include:

• In the hearing zone at the employee's normal work location;

• Next to the noise source(s);

• At the entrance(s) to the work area; and,

• At other locations within the area where the employee might work

If noise levels are below 85 dBA in the area, no further monitoring is required for that area. Should any of the noise measurements equal or exceed 85 dBA, records shall be maintained as to the noise levels recorded, where they were taken, and the source(s) of the noise. These records shall be updated periodically to determine if any changes have occurred that would warrant re-monitoring of exposed personnel. If any of the measurements equal or exceed a noise level of 85 dBA and the duration of exposure each day is unknown, employees who work in or near the high noise area or equipment shall have their noise exposure determined through personal monitoring using dosimeters. If the measurements equal or exceed 85 dBA, but the time of exposure is sporadic and less than the permissible exposure level, personal monitoring will not be required. Recommendations will be made to wear hearing protection while operating in that area or with that piece of equipment.

**4.1.2***Personal Monitoring:*

Determination of personal noise exposures will be accomplished using calibrated noise dosimeters. The dosimeter will calculate an eight-hour time-weighted average (TWA)

using the A-Scale, 5dB exchange rate, slow response, 90 dBA criterion level and be

capable of incorporating both the 80 and 90 dBA threshold values.

Sound levels from 80 – 130 decibels (dBA) will be integrated into the noise

measurement. Employees monitored will have dosimeters placed on them at the beginning of their normal work shift with the microphone attached in the "hearing zone".

The dosimeter will be worn for the full duration of the work shift while the employee

performs a normal work routine. At the end of the work shift, the dosimeter will be

removed and information analyzed. Background information will be collected from each

employee detailing job description, unusual job activities, etc., for the sample period

using the form contained in Appendix B. Those employees whose noise exposures equal

or exceed 85 dBA as an 8-hour TWA will be identified to supervisors for enrollment into

the Hearing Conservation Medical Surveillance Program.

**4.1.3** *Re-monitoring Due to Changes*:

Any area with noise levels that equal or exceed 85 dBA shall also be re-monitored whenever a change in production process, equipment, or controls increases the noise exposure such that additional employees are exposed to noise levels at or above 85 dBA

on a time-weighted average basis. Areas where the noise levels have dropped below 85

dBA due to alterations in equipment, controls or process changes shall be eliminated

from the monitoring program. DEHS shall provide copies of personal exposure

monitoring results to the supervisors of monitored employees in areas under their control.

Supervisors will notify their employees of the results.

4.2 Audiometric Testing

Upon identification of employees whose 8-hour TWA equals or exceeds 85 dBA, the Program Administrator shall contact a Professionally Licensed Healthcare Provider (PLHCP), either a qualified physician, otolaryngologist, audiologist or certified

technician, to enroll these employees in the UD Hearing Conservation Medical

Surveillance Program. Information supplied to the PLHCP will include the employee's

name, supervisor's name, work telephone number(s) and the noise levels recorded in the

employee's work area. The Program Administrator will make available copies of

dosimetry data to the PLHCP upon request. The testing must conform to OSHA’s

requirements on audiometric testing, which are covered in Appendices C through F in the

Occupational Noise Exposure Standard (29 CFR 1910.95). For a quick reference a

summary of the aforementioned appendices is contained in Appendix C.

Audiometric testing must be made available at no cost to employees exposed to TWA

Noise levels of 85 dBA or greater. Affected departments are responsible for covering

costs associated with audiometric testing and interpretation of the results as required by

UD’s Hearing Conservation Medical Surveillance Program.

**4.2.1** Employees with exposure to TWA noise levels of 85 dBA or greater must have baseline audiometric testing performed within 6 months of initial noise exposure. The employee should not be exposed to workplace noise for at least **14 hours** prior to the baseline audiogram. Hearing protection may be worn as a substitute for this requirement. The supervisor should also notify the employee to avoid high levels of non-occupational noise during this period.

**4.2.2** Audiometric testing will be provided to all employees with exposure to TWA noise levels of 85 dBA or greater. Annual retesting will be performed for all personnel enrolled

in the UD Hearing Conservation Medical Surveillance Program until separation from employment or upon transfer to duties with noise exposures below 85 dBA.

4.3 In work locations where either through administrative or engineering controls, noise

levels decrease such that the employees' 8-hour TWAs are below 85 dBA, the Program Administrator shall notify the PLHCP and the employees' supervisors, in writing, that the employees working in that area are no longer required to be enrolled in UD Hearing Conservation Program*.*

4.4 The supervisor is responsible for scheduling employee audiometric testing with a

PLHCP. Annual audiograms must be conducted within 1 year of the baseline. Annual

audiograms must be routinely compared to baseline audiograms to determine if the

employee has lost hearing ability (i.e., if a standard threshold shift (STS) has occurred).

STS is defined as an average hearing loss in either ear of 10 dB or more at frequencies of

2000, 3000, and 4000 hertz.

4.5 If the annual audiogram shows that an employee has experienced a STS, the PLHCP will arrange for the employee to retest within 30 days, and the results of the retest will be used as the annual audiogram. If a STS is indicated, the employee shall be informed of this

fact in writing within 21 days of the determination. If a PLHCP determines the STS may

be work-related or aggravated by occupational noise exposure, the employee will be

referred for a follow-up clinical audiological evaluation. The employee's supervisor will

also be notified of the STS and shall ensure that the employee has appropriate hearing

protection, is trained in their use and care, and required to use them. Employees already

using hearing protection shall be refitted (if necessary) and retrained in the use of hearing

protection and provided hearing protection offering greater attenuation if necessary.

4.6 The primary means of reducing or eliminating personnel exposure to hazardous noise is through the application of engineering controls. Engineering controls are defined as any modification or replacement of equipment, or related physical change at the noise source

or along the transmission path that reduces the noise level at the employee's ear.

Engineering controls such as mufflers on heavy equipment exhausts or on air release

valves are required where possible.

4.7 Administrative controls are defined as changes in the work schedule or operations which reduce noise exposure. If engineering solutions cannot reduce the noise, examples of

administrative controls would be increasing the distance from the noise source and giving

employees an opportunity to select their hearing protection from a variety of suitable

devices.

4.8 The Program Administrator shall provide training in the use and care of all hearing

protection devices provided to employees. The supervisor shall monitor the correct use of

all hearing protection. Environmental Health & Safety shall determine hearing protection attenuation necessary for the specific noise environments in which the hearing protection will be used. Only hearing protection with a suitable noise reduction ratio (NRR) will be used. The NRR used for calculating attenuated noise exposure levels will be calculated in

the following manner, using a safety factor of 50%:

**Reduction (dB) = (NRR - 7) ÷ 2**

For example: If the NRR on a pair of earplugs is 21, subtract 7 from that number and divide that by 2, e.g., (21 – 7) **÷** 2 (14) **÷** 2 = 7. Therefore, this pair of earplugs will reduce the TWA 7 decibels and the supervisor must determine if this will be enough protection for the employee.

4.9 Hearing protection must attenuate (lower) employee exposure at the ear to no more

than a TWA noise level of 85 dBA. The adequacy of hearing protection shall be

reevaluated whenever employee noise exposures increase to the extent that the hearing

protection may no longer provide adequate attenuation.

4.10 Employees whose 8-hour TWA noise exposures do not meet or exceed 85 dBA will be provided hearing protection if their duties require entry into noise hazard areas or use of loud equipment where sound levels measure over 85 dBA. These areas or pieces of equipment should be placarded with signs advising employees that hearing protection

should be worn.

Any personnel experiencing difficulty in wearing assigned hearing protection (i.e., irritation of the canals, pain) will be advised during training to immediately report this

to their supervisor to schedule an appointment with the PLHCP for evaluation as soon

as possible.

**5.0** [**Training**](#bookmark0)

5.1 Before using earplugs and/or earmuffs, each employee who is exposed to noise levels

at or above an eight-hour TWA of 85 dBA must receive training. This will be provided

to employees upon initial work assignment to areas that are identified as excessively

noisy, and annually thereafter or upon request.

5.2 When workers understand the reasons for the UD Hearing Conservation Program requirements and the need to protect their hearing, they will be better motivated to participate actively in the program and to cooperate by wearing their hearing protection

and taking audiometric tests. Environmental Health & Safety or supervisory personnel

knowledgeable of the requirements of the UD Hearing Conservation Program may

provide this training annually to employees exposed to 8-hour TWA noise exposures of

85 dB and above. The training shall cover:

1. The UD Hearing Conservation Program.

2. The effects of noise on hearing.

3. The purpose of hearing protection.

4. The advantages, disadvantages, and attenuation of various hearing protection.

5. The purpose of audiometric testing and an explanation of the test process.

6. Noise hazard areas and posting of those areas.

a. All hazardous noise areas must be clearly identified by signs located at their entrances or boundaries.

b. Each tool or piece of equipment producing hazardous noise shall be conspicuously marked to alert personnel, except when an entire space is designated a hazardous noise area and the equipment is stationary. Professional judgment and discretion should be exercised when labeling tools and equipment.

c. Signs and decals that describe (in writing or with other visual symbols)

the hazard and the protective measures to be taken shall be used to

designate hazardous noise areas and equipment; e.g., "DANGER,"

"Hazardous Noise," "Hearing Protection Required When in Operation."

5.3 A copy of the Occupational Noise Exposure Standard will be made available to

employees and posted in the workplace (a copy can be found in Appendix D).

Training will be documented on forms provided by Environmental Health & Safety at the time of training (refer to Appendix E). Information covered in the annual training

program will be updated to be consistent with any changes in protective devices and work

processes.

**6.0 Program Evaluation**

6.1 The Program Administrator will conduct periodic program evaluations to assess

compliance with federal and state regulations and UD Hearing Conservation Program

requirements Both the monitoring and audiometric testing portions of the UD Hearing

Conservation Program will be reviewed annually to assure its quality and effectiveness.

An evaluation of the program, including training records and course content, maintenance

of hearing protection devices and field audits of hearing protection use and record keeping

will be conducted at least annually.

Problems identified will be noted in an inspection log and addressed by the Program

Administrator. These findings will be reported to DEHS, and the report will list plans to

correct deficiencies in the program and target dates for the implementation of those

corrections.

**7.0 Record Keeping**

7.1 Audiometric test records must include the name and job classification of the employee, the

date, the examiner's name, the date of the last acoustic or exhaustive calibration, measurements of the background sound pressure levels in audiometric test rooms, and the employee's most recent noise exposure measurement

The Program Administrator shall maintain an accurate record of all employee exposure measurements. Noise exposure measurement records must be kept for 2 years and all employee audiometric testing records must be maintained for the duration of

employment. Employee records shall be provided upon request by the employee, former

employee or their designated representative.

**8.0 References**

American National Standards Institute (ANSI) Standard S1.41983, "Specifications for Sound Level Meters," June 25, 1985.

American National Standards Institute (ANSI) Standards S1.111986, "Specifications for Octave Band and Fractional Octave Band Analog and Digital Filters," July 16, 1986.

American National Standards Institute (ANSI) Standards S3.61989, "Specifications for Audiometers," May 23, 1989.

Title 29, Code of Federal Regulations (CFR), Section 1910.95, "Occupational Noise Exposure," current edition.

Title 29, Code of Federal Regulations (CFR), Section 1915 Subpart I, Appendix A

**APPENDIX A**

**AREA NOISE SURVEY FORM**

OVER for Diagram Box 

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NOISE SURVEY FORM Sample Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | | | | |
| **Bldg:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Location:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |
| **Area Posted:** \_\_\_ Yes \_\_\_ No **Hearing Protection In Use:** \_\_\_ Yes \_\_\_ No Type:\_\_\_\_\_\_\_ Manufacturer:\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |
| Sound Level Meter Results | | | | | |
| Sample # |  |  |  |  |  |
| Source Description |  |  |  |  |  |
| **Measurement Location** |  |  |  |  |  |
| Noise Pattern **C = Continuous**  **IN = Intermittent**  **IM = Impulse/Impact** | C  IN  IM | C  IN  IM | C  IN  IM | C  IN  IM | C  IN  IM |
| **Meter Response**  **F = Fast**  **S = Slow**  **I = Impulse/Impact** | F  S  I | F  S  I | F  S  I | F  S  I | F  S  I |
| **Result** | dBA | dBA | dBA | dBA | dBA |
| dB Peak | dB Peak | dB Peak | dB Peak | dB Peak |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | SOUND LEVEL METER | | MICROPHONE | | CALIBRATOR | | | **Mfg: Casella** | | **Mfg: Casella** | | **Mfg: Casella** | | | **Model: CEL-63X** | **Serial #:5044684** | **Model: CEL-495** | **Serial #:002632** | **Model:CEL-120/1** | **Serial #:3941568** | | **Name: CEL** | **Name: CEL** | **Name:** | | **Last Electroacoustic Cal Date:** | **Next Electroacoustic Cal Date:** | **Last Electroacoustic Cal Date:** | **Name:** | **Last Electroacoustic Cal Date:** | **Next Electroacoustic Cal Date:** | | **Field Calibration: Pre Cal Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Post Cal Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | **Field Calibration OK:** \_\_\_ Yes \_\_\_ No **Field Calibrated By:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | **Measurements Obtained:** \_\_\_ Indoors \_\_\_ Outdoors  **Wind Screen:** \_\_\_ Used \_\_\_ Not Used | | | | | | | **Sampler:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |  | | | | | | |  | | | | | | | | | | | |

(e.g. Floor Plan of Room)

|  |
| --- |
| Diagram: |

**APPENDIX B**

**NOISE DOSIMETER SURVEY DATA COLLECTION FORM**

|  |  |
| --- | --- |
|  | **Noise Dosimeter -Survey Data Collection Form** |

Instrument Manufacturer: Model Type:

Location

Date

Process

Contaminant

**Noise**

Assessor

Sample Type

Area Dosimeter

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| (a) | (b) | (c) | (d) | (e) | (f) | (g) | **SLM\*** | **OSHA HC\*** | **OSHA PEL\*** |
| **Employee** | **Dosimeter**  **ID#** | **Location** | **Task** | **Start** | **Stop** | **Time**  **(min)** | **Reading** | **TWA** | **TWA** |
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\*All readings in dBA unless otherwise noted.

**APPENDIX C**

**SUMMARY OF THE AUDIOMETRIC TESTING REQUIREMENT**

**Summary for Audiometric Testing Requirements**

**Per 29CFR 1910.95**

a. All employees routinely exposed to hazardous noise shall be placed in a hearing-testing

program. That program shall include pre-placement, periodic (at least once,

annually), and termination audiograms. Employees who infrequently or incidentally

enter designated hazardous noise areas need not participate in the audiometric testing

program.

b. All audiometric testing shall:

(1) Be performed 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. A technician who performs audiometric tests shall be responsible to an audiologist, an otolaryngologist, or a physician.

(2) Transpire in a testing environment with background octave band pressure levels not greater than the following:

500 Hz 1000 Hz 2000 Hz 4000 Hz 8000 Hz

30 dB 30 dB 47 dB 57 dB 62 dB

The test environment shall be resurveyed annually using equipment conforming at least to the Type 2 requirements of ANSI Standard S1.41983 and the Order II requirements of ANSI Standard S1.111986 (references (f) and (i)).

(3) Include pure tone, air conduction, hearing threshold examinations of each ear at the test frequencies of at least 500, 1000, 2000, 3000, 4000, and 6000 Hz.

(4) Be accomplished with audiometers that meet the specifications of ANSI Standard S3.61989 (reference (j)).

c. Every effort should be made to conduct a reference audiogram on workers before they

are assigned to duties involving hazardous noise exposure. In no case shall a reference

audiogram be conducted more than 1 month from the date of a worker's initial exposure

to hazardous noise. Regardless of the time of initiation, the first valid hearing test

administered is the reference audiogram and shall be preceded by at least 14-hours

without exposure to workplace noise. The worker shall be cautioned to avoid high levels

of non-occupational noise exposure during a 14-hour period preceding the examination.

d. Employees who continue to work in designated hazardous noise areas shall receive annual

audiograms.

e. Termination audiogram shall be conducted on each worker about to stop working in

designated hazardous noise areas. Employees moving to other jobs involving hazardous

noise exposure need not be given a termination audiogram.

f. Follow up audiograms shall be conducted when an individual's audiogram shows a

threshold shift relative to the original or revised reference audiogram of an average of 10

dB, or more, at 2000, 3000, and 4000 Hz in either ear. The National Institute for

Occupational Safety and Health (NIOSH) age corrections may be applied in cases of

positive threshold shift (29 CFR 1910.95) (reference (k)). Medical evaluation is required to

validate the existence of a permanent noise induced threshold shift and shall be done by an

audiologist, otolaryngologist, or physician. Any determination that the noise induced

threshold shift is not work related or has not been aggravated by occupational noise

exposure shall be made by a physician.

g. If the threshold shift is confirmed as permanent, the individual shall be notified in writing

within 21 days of such determination, and the condition entered in the individual's medical

record. The individual shall be refitted with hearing protection, instructed in its care and

use, and strongly encouraged to wear the hearing protection.

h. A new reference audiogram shall replace the original reference audiogram, when the

medical evaluation confirms the threshold shift noted during the annual audiogram is

permanent. The original reference audiogram shall be retained in the patient's medical

record. A revised reference audiogram should also be established, when the hearing

threshold demonstrated in the annual audiogram indicates significant improvement over the

existing reference audiogram.

**APPENDIX D**

**COPY OF THE OSHA NOISE STANDARD**

**OSHA Noise Standard Links**

**29 CFR 1910.95 --OSHA Noise Std.** <https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9735>

**Appendix A**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9736>

**Appendix B**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9737>

**Appendix C**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9738>

**Appendix D**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9739>

**Appendix E**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9740>

**Appendix F**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9741>

**Appendix G**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9742>

**Appendix H**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9743>

**Appendix I**

<https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9744>

**APPENDIX E**

**TRAINING DOCUMENTATION FORMS**

* **UD Hearing Conservation Training Log**
* **Record of Issued Hearing Protection (By Dept.)**
* **Program Evaluation Summary Worksheet**

**UD Hearing Conservation Training Log**

**Training Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Training Conducted by:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |
| --- | --- | --- |
| **Employee Name (printed)** | **Employee Signature** | **Job Title** |
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**Record of Issued Hearing Protection (By Dept.)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **University of Delaware**  **Personnel in Hearing Conservation Program**  ***Date:*** | | | | |
|  | | | | |
| Hearing protection is required for and has been issued to the following personnel: | | | | |
| **Employee Name** | **Department** | **Job Description/ Equipment Being Used** | **Type of Hearing Protection Issued** | **Date Issued** |
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**Program Evaluation Summary Worksheet**

|  |  |
| --- | --- |
| Date of Evaluation: | Evaluated by (list all present): |
| Written Program Reviewed: Yes No | |
| Any Modifications/Revisions Needed: Yes No (If yes, detail below)  The following content was added/modified/removed from the written program: | |
| Do injury records or audiometric testing indicate a need for additional employee training on the Hearing Conservation Program? Yes No (If yes, detail below) | |
| Do any NEW jobs, processes or areas produce a high noise levels? Yes No  If yes, list: | |
| Is there any record of failure to correct reported hearing or noise problems in a timely manner?  If yes, what corrective action is needed? | |
| Other Comments: | |